

NUCLEAR REGULATORY COMMISSION



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In the Matter of:

SOUTHERN CALIFORNIA EDISON, ET AL

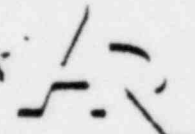
(San Onofre Nuclear Generating Station,  
Units 2 and 3)

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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 In the Matter of: :  
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 SOUTHERN CALIFORNIA EDISON, ET AL : Docket Nos.  
 : 50-361-OL  
 (San Onofre Nuclear Generating Station, : 50-362-OL  
 Units 2 and 3) :  
 :  
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Room 310  
San Diego County  
Administration Building  
1600 Pacific Highway  
San Diego, California

Friday, March 12, 1982

Oral argument in the above-entitled matter was  
convened, pursuant to notice, at 9:00 a.m.

BEFORE

- STEPHEN F. EILPERIN, Chairman  
Administrative Judge  
Atomic Safety and Licensing Appeals Board
- DR. REGINALD GOTCHY, Member  
Atomic Safety and Licensing Appeals Board
- DR. REED W. JOHNSON, Member  
Atomic Safety and Licensing Appeals Board

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APPEARANCES:

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C O N T E N T S

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ORAL ARGUMENT BY:

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Richard Wharton,  
on behalf of Intervenors  
Carstens and Friends of The  
Earth Et Al.

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David R. Pigott,  
on behalf of Applicants,  
Southern California Edison Company,  
Et Al.

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Lawrence Chandler,  
on behalf of The Nuclear  
Regulatory Commission Staff

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REBUTTAL ORAL ARGUMENT OF:

Richard Wharton,  
on behalf of Intervenors  
Carstens and Friends of The  
Earth, Et Al.

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300 7TH STREET, S.W. , REPORTERS BUILDING, WASHINGTON, D.C. 20024 (202) 554-2345

P R O C E E D I N G S

(9:01 a.m.)

JUDGE EILPERIN: On the record.

Good morning, ladies and gentlemen. My name is Stephen Eilperin. I am the Chairman of the NRC Appeal Board in this case. With me today are the two other members of the Board. To my right is Dr. Reed Johnson, and to my left is Dr. Reginald Gotchy.

I would like to thank the San Diego County Administration for letting us use this very handsome room today for our oral argument. The argument this morning is on Intervenors Carstens application for a stay of the Licensing Board's January 11 partial initial decision, which authorized the issuance of a low power operating license for San Onofre Nuclear Generating Station Unit 2.

The low power license was in fact issued on February 16, but the plant has not yet gone critical, and will not do so for some six or seven weeks as we understand it.

When we get back to Washington, D.C., we will be issuing an order requiring the utility to advise us five business days before they plan to go critical, so that we can make sure that our decision on the stay motion issues before that event.

The terms of the argument today are governed by our

1 order of February 16. 45 minutes have been allotted for each  
2 side, and the Intervenors may reserve a portion of their time  
3 for rebuttal.

4 I will now request Counsel for the respective  
5 parties to identify themselves formally for the record, and  
6 we will start with Mr. Wharton.

7 MR. WHARTON: My name is Richard Wharton. I am  
8 with the University of San Diego Environmental Law Clinic.  
9 I am representing the Intervenors Carstens, Friends of the  
10 Earth, et al.

11 JUDGE EILPERIN: Thank you, Mr. Wharton. Do you  
12 wish to reserve any time for rebuttal argument?

13 MR. WHARTON: Yes. I would like to reserve  
14 approximately ten minutes, depending on how the opening  
15 argument goes, but I anticipate ten minutes for rebuttal.

16 JUDGE EILPERIN: Mr. Pigott?

17 MR. PIGOTT: My name is David R. Pigott, with the  
18 law firm of Orrick, Herrington, & Sutcliffe, 600 Montgomery  
19 Street, San Francisco, California, representing Applicants.  
20 Also with me from that same firm is Mr. John Mendez. With  
21 me from the Southern California Edison Company Law  
22 Department, Mr. Charles R. Coker, associate general counsel,  
23 and Mr. James Beoletto.

24 JUDGE EILPERIN: Thank you, Mr. Pigott. Mr.  
25 Chandler?

1 MR. CHANDLER: On behalf of the Staff, Mr.  
2 Chairman, my name is Lawrence Chandler. With me is Mr.  
3 Benjamin Vogler. We are with the Office of Executive Legal  
4 Director of the Nuclear Regulatory Commission, Washington,  
5 D.C.

6 JUDGE EILPERIN: Thank you, Mr. Chandler. Have  
7 you and Mr. Pigott reached an agreement as to how you want to  
8 allot your time?

9 MR. CHANDLER: Yes, sir. We have. I believe the  
10 Applicants anticipate using 25 minutes of the allotted time,  
11 and the Staff will be using 20 minutes.

12 JUDGE EILPERIN: Thank you, Mr. Chandler.

13 MR. PIGOTT: I should also like to indicate the  
14 presence of Mr. Bob Dietch, vice-president nuclear engineering  
15 and operation, in charge of the San Onofre facility.

16 JUDGE EILPERIN: Thank you, Mr. Pigott. Mr.  
17 Wharton, do you want to proceed?

18 MR. WHARTON: Yes. Mr. Chairman, may I proceed  
19 from the desk, or would you prefer us at the podium?

20 JUDGE EILPERIN: I would prefer if you would stand  
21 at the podium.

22 MR. WHARTON: Very well.

23 ORAL ARGUMENT BY MR. WHARTON ON BEHALF OF INTERVENORS CARSTENS  
24 AND FRIENDS OF THE EARTH ET AL.

25 MR. WHARTON: Mr. Chairman, members of the Appeals

1 Board, I would first like to express my appreciation for you  
2 coming out to San Diego and scheduling this hearing on this  
3 day. As you are aware, it is a very critical issue.

4           Going into the argument itself, as the Board is well  
5 aware, 10 CFR 2.788 provides that any party may file an  
6 application for a stay of the effectiveness of a Licensing  
7 Board decision, and in determining whether to grant or deny  
8 such an application, the Board will consider four factors.

9           The first factor is whether the moving party has  
10 made a strong showing that it is likely to prevail on the  
11 merits. Two, whether the party will be irreparably injured  
12 unless a stay is granted. Three, whether the granting of a  
13 stay would harm other parties, and where the public interests  
14 lie.

15           It would appear clean, then, that the Board has the  
16 power to grant a stay. Why else would the regulations provide  
17 for the procedure for a stay and the hearing for it?

18           It would also appear from the wording of the 2.788  
19 that the showing that the requesting party has to make is not  
20 extremely clear. For example, what constitutes irreparable  
21 injury to the party? For example, whether any harm, any harm  
22 at all, to the other parties, would justify rejecting a stay,  
23 and lastly, what is it they mean exactly by the public  
24 interest.

25           These were the questions that we had, and of course



1 we went to the NRC cases to determine which cases show what  
2 kind of showing the Intervenors make in order to get a stay.

3 The problem was, we could not find one case in which  
4 the NRC has granted a stay. I am not saying that it hasn't  
5 occurred, but we have not been able to find one. That  
6 explains one of the reasons why we don't have voluminous case  
7 authority demonstrating what the Board has found appropriate  
8 in order to grant a stay.

9 The question then arose in our mind if the statutes  
10 allow you to grant a stay, and there have been no stays  
11 granted, why is this?

12 JUDGE EILPERIN: Excuse me, I might say that the  
13 Appeal Board, if I recollect, has issued stays before. It  
14 did so in the Seabrook case, and the Board generally speaking  
15 applies the same standards for stay motions as does any  
16 court of appeals.

17 MR. WHARTON: I am reluctant to say I didn't find  
18 the Seabrook case. I am saying that it is not there. I  
19 just wasn't able to find it.

20 The cases that we did find indicate that the  
21 reasons appear in every case that we have reviewed why the  
22 applying part has not received the cases, because either they  
23 have not made a strong showing that is likely to prevail on  
24 the merits, or the operation of the plant was not imminent so  
25 as to threaten irreparable injuries to the parties and the

1 public by the operation of the plant itself.

2 In the present case, I believe the Intervenors in  
3 their petition for the stay, their brief in support of their  
4 exceptions, have made the strong showing of the likelihood to  
5 prevail on appeal, which we will argue further today.

6 Also in the particular case here, because the  
7 plant operation is imminent, and because the errors committed  
8 by the Board involve crucial seismic safety issues, we submit  
9 that because of these crucial seismic safety issues, the very  
10 fact that they exist places the Intervenors and the Public  
11 in jeopardy of suffering irreparable injury unless a stay is  
12 granted.

13 We would concede that if we cannot convince the  
14 Board of the likelihood of our prevailing on appeal, that we  
15 probably cannot meet the other requirements. On the other  
16 hand, if the Board is convinced that there is a likelihood of  
17 the Intervenors prevailing on the merits, that such a finding  
18 by the Board would justify granting a stay, because as a  
19 matter of course, the other requirements would fall into line  
20 once that particular requirement is met.

21 JUDGE EILPERIN: You don't think you are obliged  
22 to prove that an earthquake is going to happen in order to  
23 prevail on a showing of irreparable injury, I take it.

24 MR. WHARTON: Mr. Chairman, that is the very point,  
25 that no one can prove that an earthquake is going to happen.

1 What we do know from the facts of the case so far is we do  
2 have geologic features extremely close to the plant. We do  
3 know there are capable faults within eight kilometers from  
4 the plant. We do know those faults are active. We do know  
5 that an earthquake can occur at any time. That is not really  
6 contested.

7 JUDGE EILPERIN: Okay, why don't you proceed with  
8 the merits of your argument.

9 MR. WHARTON: Very well.

10 JUDGE EILPERIN: Thank you.

11 MR. WHARTON: The first issue we would look to on the  
12 merits of the case itself has to do with the issue of the  
13 capability of the Cristianitos fault. Yesterday, we spent a  
14 lot of time looking for the Cristianitos fault. In fact, we  
15 saw it from the air and we saw it on the ground. We saw that  
16 the fault is within 1,000 yards of the plant. The Board  
17 itself, at page 20, states if the Cristianitos fault were  
18 shown to be a capable fault, it would certainly be  
19 significant and perhaps crucial to the safety of the San  
20 Onofre facility. But the Board decided at page 21, they  
21 have determined that prior opportunity to litigate the  
22 capability of the Cristianitos fault at the construction  
23 permit stage foreclosed the -- their word -- relitigation of  
24 that question in these proceedings.

25 The issue of the Cristianitos fault has never been

1 litigated. It seems incredible to me and other observers of  
2 this case that the fault which is closest to the plant has  
3 never been litigated as to whether or not it is capable, and  
4 in fact when the Intervenors tried to litigate that issue,  
5 the Board came up with a doctrine of foreclosure, where none  
6 of the elements of foreclosure applied, to throw the issue  
7 out so that it still has not been litigated to this date.

8 JUDGE EILPERIN: Let us assume for the moment that  
9 the Licensing Board was wrong --

10 MR. WHARTON: Yes.

11 JUDGE EILPERIN: -- in ruling that your client was  
12 foreclosed from litigating the issue of the capability of  
13 the Cristianitos fault. I thought the Licensing Board also  
14 had an alternative ground for its decision on that issue,  
15 namely that the testimony of Mr. Simons on the Cristianitos  
16 fault issue, the Licensing Board believed was not worth very  
17 much.

18 MR. WHARTON: I will address that issue.

19 JUDGE EILPERIN: Thank you.

20 MR. WHARTON: Looking to the testimony of Mr.  
21 Simons, first we would look to his qualifications as an expert  
22 witness.

23 JUDGE EILPERIN: Let me interrupt for one more  
24 second.

25 MR. WHARTON: Yes.

1 JUDGE EILPERIN: Do you -- did you have any witness  
2 other than Mr. Simons on the Cristianitos fault?

3 MR. WHARTON: Mr. Chairman, I believe one of the  
4 best witnesses we had on the Cristianitos fault was Dr. Sean  
5 Biehler for the Applicants, which we will argue.

6 JUDGE EILPERIN: But you were not foreclosed from  
7 putting on any testimony in the case on the Cristianitos  
8 fault?

9 MR. WHARTON: We had written testimony from Mr.  
10 Mark Legg regarding the activity capability of the  
11 Cristianitos fault. I believe that testimony was thrown out  
12 also. We were not able to cross-examine and get into the  
13 issue of the Cristianitos fault with the witnesses for the NRC  
14 Staff.

15 When the Board ruled that the issue of the  
16 Cristianitos was foreclosed, we did not bring the issue up  
17 again, because we were told not to.

18 JUDGE JOHNSON: Did you have the opportunity to  
19 cross-examine Dr. Biehler?

20 MR. WHARTON: Yes, we did. Yes, we did, and I  
21 believe --

22 JUDGE JOHNSON: And was Dr. Biehler's opinion that  
23 the Cristianitos fault was active?

24 MR. WHARTON: There was one thing -- no.

25 JUDGE JOHNSON: You said he was your best witness,

1 and I just --

2 MR. WHARTON: Dr. Biehler's opinion was that it was  
3 not active. I believe the cross-examination of Dr. Perry  
4 Ehlig, which indicated that the Cristianitos fault is a  
5 listric-normal fault, that is, that it trends, goes down and  
6 towards the bottom trends towards the west, and the  
7 testimony of Dr. Sean Biehler, using Dr. Sean Biehler's  
8 chart, I believe is the significant evidence that was never --  
9 we have not been able to present that to the Board by way of  
10 findings because it was no longer an issue.

11 Dr. Biehler in his chart -- and it is on page 10A  
12 of our appeals brief, the brief in support of exceptions --

13 JUDGE JOHNSON: I have --

14 MR. WHARTON: Yes.

15 JUDGE JOHNSON: May I interrupt you --

16 MR. WHARTON: Certainly.

17 JUDGE JOHNSON: -- one minute here. I have a sort  
18 of legal question. What reliance do you think this Board  
19 should put on your appeal brief, in that we are now deciding  
20 your stay application. It is my understanding that the other  
21 parties have not yet under the rules had an opportunity to  
22 reply to your appeal brief.

23 MR. WHARTON: That is correct.

24 JUDGE JOHNSON: So you in effect had two bites at  
25 this apple, and the other parties have only had one. Do you

1 really believe that we should put any reliance on your appeal  
2 brief in our consideration of the stay application?

3 MR. WHARTON: I believe so. First, to answer the  
4 first point as far as what I am referring to, I am referring  
5 to right now only the chart of Dr. Biehler on page 10A of  
6 the appeal brief, which is part of the record.

7 JUDGE JOHNSON: Yes.

8 MR. WHARTON: As far as the appeal brief itself is  
9 concerned, as you say, we had two bites at the apple. At the  
10 same time, they have had two bites to see what our argument  
11 is going to be. I have not received their full argument in  
12 opposition to our appeal as of yet, in writing. I don't know  
13 what their full argument is. They know, as of February 26,  
14 what our full argument is, because it is all in our appeal  
15 brief. It is not like the Applicants and the Staff have not  
16 had a full opportunity to thoroughly review every argument we  
17 have raised. It is all in writing. They will have an  
18 opportunity to present oral argument about that, and they will  
19 have an opportunity to present further appeal briefs. I  
20 believe that certain points, because of limitation on the  
21 ten-page argument, is so short, there is not too much you can  
22 say in ten pages to justify an appeal. I am not saying that  
23 the appeal brief in totality should be accepted, but portions  
24 of it that are highly relevant should be.

25 JUDGE EILPERIN: Mr. Wharton?

1 MR. WHARTON: Yes, sir.

2 JUDGE EILPERIN: I understood that, from what you  
3 said, that you had the opportunity to cross-examine Mr.  
4 Biehler and Mr. Ehlig --

5 MR. WHARTON: That is correct.

6 JUDGE EILPERIN: -- on the Cristianitos fault issue,  
7 but not the NRC Staff witnesses?

8 MR. WHARTON: That is correct.

9 JUDGE EILPERIN: What was the reason for the  
10 distinction?

11 MR. WHARTON: Because it was when the issue of the  
12 Cristianitos fault was foreclosed, at the time of Mr. Simons'  
13 testimony, we went through the Applicants' case. The  
14 Applicants testified regarding the Cristianitos fault. They  
15 raised it as an issue. Mr. Simons came in. At that point,  
16 the Board ruled Mr. Simons testimony is stricken, and there is  
17 no more issue of the Cristianitos fault, and after that is  
18 when the Staff's witnesses came on and testified.

19 JUDGE EILPERIN: I see. Who for the NRC Staff  
20 spoke to the issue of the Cristianitos fault in his written  
21 direct testimony?

22 MR. WHARTON: That would be in the -- the Staff SER  
23 has a lengthy discussion of the activity of the Cristianitos  
24 fault. I believe that would have been -- Mr. Cardone would  
25 have been the witness regarding the activity of the



1 Cristianitos fault. Mr. Cardone didn't testify on the stand  
2 regarding the Cristianitos fault, although there is -- the  
3 evidence is in the record in the form of the SER, regarding  
4 the Cristianitos fault. It was an area we did not get into.

5 We could have gotten into it simply because it was  
6 in the SER, that is, submitted as written testimony. We did  
7 not get into it because it was foreclosed as an issue.

8 JUDGE JOHNSON: Well, I think what you are telling  
9 us is that the persuasive evidence that the Board should have  
10 used to allow the litigation was Dr. Simons' -- or Mr. Simons'  
11 testimony, and that -- I will characterize it as lines and  
12 circles, in other words -- and I would like to ask you a  
13 question about that testimony.

14 MR. WHARTON: Yes.

15 JUDGE JOHNSON: And I believe the major point was  
16 that if he plotted circles representing the likely location of  
17 various earthquakes in the vicinity, that some 20 of those  
18 circles intersected the line which represented the  
19 Cristianitos fault. I was unable to find anywhere where Mr.  
20 Simons had tested what the significance of 20 of those  
21 circles intersecting that one particular line was.

22 It appeared to me that almost any line you drew in  
23 that map area, of the same length of the Cristianitos fault,  
24 37 kilometers, or miles, and you drew the same circles, that  
25 almost any line segments you drew of the right length, you

1 might get 20 or more circles that intersected it. So, I  
2 couldn't see where Mr. Simons' testimony was probative of  
3 anything, or -- I mean, if he had shown that it were the only  
4 line in which 20 of those epicenters plotted as areas would  
5 have given anything like 20 intersections, and all the rest  
6 gave two or three, it would seem to me that would have been  
7 very persuasive evidence, but I was unable to see how his  
8 evidence was supposed to be solidly indicative of the fact  
9 that those epicenters should have been associated with that  
10 particular line.

11 MR. WHARTON: Well, I think if we look at the chart  
12 itself, I somewhat resent what the Board calls a error  
13 drawing -- I mean a circle drawing exercise. As you know,  
14 the data is gathered from Cal Tech. Mr. Simons is an expert  
15 in -- he has a degree from MIT geophysics. He is an expert  
16 in data retrieval and use of computers for data retrieval,  
17 and drawing charts for Scripps Institute.

18 Now, the significance of drawing these lines is  
19 that this is where the earthquakes occur, as you know. The  
20 lines in his testimony indicates with 68 percent accuracy,  
21 you can place 20 earthquakes on the Cristianitos fault,  
22 given that the error bars is the standard of conservatism.

23 JUDGE JOHNSON: That is correct. Now, I say if I  
24 were trying to perform that exercise and trying to persuade  
25 someone that the Cristianitos fault was somehow the center of

1 earthquake activity, I would have drawn some comparable lines  
2 37 kilometers long in that same map area, and shown that only  
3 two earthquake circles intersected, or one earthquake or five  
4 earthquake circles intersected these randomly drawn lines, but  
5 the way that chart looked to me, it would appear that any line  
6 I drew in that area 37 kilometers long, there would be a  
7 likelihood of 20 or more of those circles would intersect it.

8 MR. WHARTON: Well, if there -- if we are talking  
9 about drawing any lines, but we are not talking about drawing  
10 any line. We are talking about the Christianitos fault, I  
11 mean that is the significance.

12 JUDGE JOHNSON: Sure, but what you are trying to  
13 prove is that that fault somehow represents a collection of  
14 earthquake epicenters.

15 MR. WHARTON: No.

16 JUDGE JOHNSON: I mean, that that line --

17 MR. WHARTON: No. The point is, is under the  
18 regulations, a fault is capable if it has experienced  
19 movement, I believe, 125,000 years, I forget the exact figure  
20 as to how long a period of time, but has experienced  
21 movement on that fault. Our point is, is that when you have  
22 an earthquake on a fault, by its nature that means there is  
23 movement on that fault, which means it is a capable fault  
24 under the regulations. Once a fault is determined capable  
25 under the regulations, then there are a series of things that

1 you have to do that have not been done here.

2 JUDGE JOHNSON: I am somewhat familiar with that,  
3 but what I am trying to say is that I don't see where those  
4 circles drawn in the way that Mr. Simons drew them,  
5 establishes movement on that fault. I think the same  
6 procedure could be carried out to show that there is a  
7 comparable amount of movement on any randomly drawn line in  
8 that particular area that he mapped.

9 MR. WHARTON: Well, I am not aware that what you  
10 are saying is in fact the way things are. What we are saying  
11 is given that in 1975, for example, two earthquakes occurred,  
12 given that Dr. Biehler's testimony, when you look at the  
13 error bars drawn around the epicenters -- the hypocenters of  
14 his earthquakes, and given that -- given Dr. Biehler's  
15 chart on page 10-A, and given the shallowest possible  
16 projection of the Cristianitos fault, given Dr. Biehler's  
17 own error circle, you will find that the shallowest  
18 projection of the Cristianitos fault is inside the error  
19 circles.

20 Again, we are talking about cumulative evidence  
21 that these earthquakes are not random. These earthquakes are  
22 occurring on the Cristianitos fault.

23 JUDGE EILPERIN: But let me ask you this, Mr.  
24 Wharton.

25 MR. WHARTON: Yes.

1 JUDGE EILPERIN: There was evidence in the record  
2 let in from both the Applicant and the Staff dealing with the  
3 capability of the Cristianitos fault. Would it be your  
4 contention that had the Licensing Board considered Mr.  
5 Simons' testimony, that it would have been arbitrary for the  
6 Licensing Board to have found the Cristianitos fault not  
7 capable? In other words, if the Licensing Board had,  
8 instead of striking Mr. Simons' testimony, on the ground that  
9 it was not of probative value and you were foreclosed from  
10 litigating the issue of the Cristianitos fault, if instead of  
11 doing that it considered that testimony, obviously the  
12 Licensing Board in striking it indicated that it did not  
13 think it was of much probative value, I am hypothesizing a  
14 situation where it considered it, it considered the testimony  
15 of the Staff and the Applicant, would you say under those  
16 circumstances it would be arbitrary for the Board to conclude  
17 that the Cristianitos fault was not capable?

18 MR. WHARTON: No, it would not be. But they didn't  
19 do that, as you are well aware. They did not. No, it would  
20 not be arbitrary if they fully heard the issue all the way  
21 through the hearing, heard all the evidence, all cross-  
22 examination was allowed, and then decided that the  
23 Cristianitos was not active, based upon all the evidence,  
24 without seeing their findings, it is hard to say, but it  
25 wouldn't necessarily be arbitrary.

1 JUDGE EILPERIN: Now, why can't we do that? Is your  
2 point we can't do that because you have not been allowed to  
3 cross-examine the NRC Staff on the matter?

4 MR. WHARTON: That is correct. Well, that is not  
5 the only reason. We have the issue of the capability of the  
6 Cristianitos fault. Our position is that it should have  
7 been fully litigated. They foreclosed it halfway through  
8 the hearing after allowing one side to present evidence and  
9 the other side not to. Preclude us --

10 JUDGE EILPERIN: I am trying to figure out what  
11 fully litigated means, and what more you would have litigated.

12 MR. WHARTON: Yes.

13 JUDGE EILPERIN: I understand from what you had  
14 said before, it was my impression that what you say you have  
15 been denied has been the right to cross-examine the NRC Staff  
16 on the issue. You cross-examined Dr. Biehler and Dr. Ehlig  
17 on the issue, and Mr. Simons' testimony was there for the  
18 Licensing Board to read and for us to read. The Licensing  
19 Board just threw it out. I am just trying to find out what  
20 more would be on the record.

21 MR. WHARTON: Yes, I was getting to that.

22 JUDGE EILPERIN: Okay.

23 MR. WHARTON: That is, after Mr. Simons'  
24 testimony, the examination of the Staff's witnesses, and most  
25 importantly, the ability for us to present findings of fact

1 based upon the entire record -- we don't know what the entire  
2 record would be now, because it was cutoff at a certain  
3 point -- to present findings of fact based upon the entire  
4 record, and the arguments to support those findings of fact  
5 based upon the entire record, and then have the Board come  
6 through, consider all of the evidence through the whole  
7 hearing, including cross-examination of the Staff, make  
8 findings to justify why they found the Cristianitos not to be  
9 capable. It was not done.

10 JUDGE EILPERIN: But you can argue that to us.

11 MR. WHARTON: Yes.

12 JUDGE EILPERIN: I mean, you have the record there.  
13 You can say that -- you can show what Dr. Simons -- Mr. Simons  
14 testimony was, and you can argue to us what we should find on  
15 the basis of that evidence, so I still don't see what beyond  
16 your being shut off from cross-examining the NRC Staff, what  
17 beyond that is really at issue. That is what I am trying to  
18 get at.

19 MR. WHARTON: Well, you are saying I can argue it  
20 to you, but I am arguing it to you on appeal. I cannot argue  
21 facts that are not on the record. I cannot argue --

22 JUDGE EILPERIN: I understand that.

23 MR. WHARTON: -- findings that we weren't able to  
24 submit.

25 JUDGE EILPERIN: I understand.

1 MR. WHARTON: And I cannot argue where they are  
2 wrong in their decision.

3 JUDGE EILPERIN: All right, but all I am trying to  
4 get at is, as I understand it, all of the facts that you would  
5 put in on the issue are in the record, except for those  
6 facts which you would have adduced through cross-examination  
7 of the NRC Staff. Am I wrong in that assumption?

8 MR. WHARTON: Well, Dr. -- no. I do not --  
9 basically we have, it was Dr. Simons' testimony was thrown  
10 out. Mark Legg's, as to Cristianitos fault, and anything  
11 regarding the Staff, that is correct.

12 JUDGE EILPERIN: Do you want to proceed to your  
13 second issue?

14 MR. WHARTON: Yes. On the issue of the  
15 foreclosure -- correction.

16 On the issue of the ruling on the segmentation of  
17 the OZD, as we have stated in our petition for a stay, the  
18 Board in its ruling determined that the Offshore Zone of  
19 Deformation was segmented. The Licensing Board at the  
20 construction permit hearing, in which the Applicants were  
21 parties, and which the Staff were parties, stated on the  
22 record and in the decision at 6 AEC 942, The Applicants and  
23 Staff agreed to the stipulation which specifies that the  
24 adequacy of the design basis earthquake will be litigated in  
25 the framework of the model set forth in the USGS GI and the



1 quoted sections of the report in paragraph 59. The Board has  
2 reviewed the information in the record and the Staff's  
3 evaluation of that information, and finds the Staff model is  
4 the appropriate one.

5 The paragraph referred to and incorporated in the  
6 decision, the Newport-Inglewood zone of fault and folds,  
7 South Coast Offshore fault and the Rose Canyon fault zone  
8 cannot be disassociated. Instead, an extensive linear zone  
9 of deformation at least 240 kilometers long, extending from  
10 Santa Monica Mountains to at least Baja California, seems  
11 well-established by the present evidence. The Santa Monica,  
12 California zone of deformation must be considered potentially  
13 active and capable of an earthquake whose magnitude could be  
14 commensurate with the length of the zone.

15 That is very important language, because we are  
16 talking about an adjudication between the present parties,  
17 that the OZD is 240 kilometers long, that the earthquake that  
18 can occur is commensurate with the length of the entire zone,  
19 not the segment.

20 As we stated in the record, Mr. Pigott on four  
21 different occasions agreed, and said, the issue of the  
22 continuity, throughgoingness of the OZD is not at issue. We  
23 agree it is continuous.

24 JUDGE EILPERIN: Okay. Let me see if I am mistaken  
25 or not mistaken.

1 MR. WHARTON: Yes.

2 JUDGE EILPERIN: I read Mr. Devine's testimony of  
3 USGS, explaining what he took to be the meaning of that  
4 language at the construction permit stage. Do you have any  
5 disagreement with Mr. Devine's understanding of what that  
6 language meant?

7 MR. WHARTON: I am not sure which testimony you are  
8 referring to.

9 JUDGE EILPERIN: Okay. I think it was testimony  
10 which said that the zone -- that the three segments, if you  
11 will, could not be disassociated, but that did not mean that  
12 a rupture would necessarily be the entire length of the  
13 240 kilometer zone of deformation.

14 MR. WHARTON: No, I do not disagree with that.

15 JUDGE EILPERIN: You don't disagree with it.

16 MR. WHARTON: No, I do not. We are not arguing  
17 that rupture of the entire 240-kilometer length. The Board,  
18 I believe, in this case, referred to Dr. Brune's testimony as  
19 trying to show that that is what we are trying to say. I  
20 believe that was set up as a straw man. We are not saying  
21 that at all. Dr. Brune's point in bringing up the rupture of  
22 the entire length of the OZD was to show the absolute most  
23 conservative point. That is, it is a benchmark, is the most  
24 conservative judgment you could make. He didn't say that  
25 that is the one you should base it on.

1 JUDGE EILPERIN: Are you saying that the -- let me  
2 ask the question another way. Is your point that the Staff  
3 or the Applicant put in testimony which assumed segmentation  
4 in the sense that the fault, the zone of deformation would be  
5 blocked off at the particular segments which have been  
6 identified during the testimony?

7 MR. WHARTON: That is my understanding of what the  
8 Board's ruling was.

9 JUDGE EILPERIN: Well, I am trying to understand  
10 whether or not the Staff or the Applicant put on a case  
11 which was inconsistent with the USGS model, if you will, of  
12 the Offshore Zone of Deformation.

13 MR. WHARTON: I don't think that they did. That is  
14 why I am so surprised at the ruling, because the evidence  
15 that was presented was not presented for that purpose, that  
16 was, to come up with an idea that it was segmented. The  
17 Applicants' witnesses did present witnesses regarding that  
18 the Newport-Inglewood Zone of Deformation was cut off at one  
19 point from the result of, I believe -- I forget the name of the  
20 high, but it was a structure that cut off the Newport-  
21 Inglewood Zone of Deformation.

22 I believe that we did make objection at that time,  
23 and that is when we had the assurances that what we are  
24 talking about here, we are just trying to show the nature of  
25 these segments, we are not denying that they are not

1 throughgoing.

2 JUDGE EILPERIN: Okay, so you are saying that the  
3 case as it went in, except perhaps for this one instance that  
4 you mentioned, did not assume that the Offshore Zone of  
5 Deformation was blocked off at any particular point, but that  
6 the Licensing Board erred in making that kind of a finding?

7 MR. WHARTON: Yes. Yes. There is no evidence to  
8 support that, and if there is any evidence to support it,  
9 maybe I missed it as the attorney, but that is only because  
10 there was agreement between the parties that it was not at  
11 issue. Yes, we did allow evidence to go in regarding this  
12 blocking off, but we objected to it. Then we were told, don't  
13 worry about it. We are not litigating segmentation. The  
14 decision comes down saying it is segmented, and it makes a  
15 significant difference.

16 JUDGE EILPERIN: What difference does it make?  
17 For example, both the Applicants and the Staff as I  
18 understand it did put on evidence and take the position that  
19 the peak ground acceleration, given the USGS model, was  
20 0.67 g.

21 MR. WHARTON: Right.

22 JUDGE EILPERIN: Now, is your point that the  
23 Licensing Board would have found a higher ground acceleration  
24 if they had concluded that the zones were in fact not  
25 segmented?

1 MR. WHARTON: Yes. The point is, is that you  
2 determine the ground accelerations you can expect from an  
3 event based upon the magnitude of the event. That is what  
4 the testimony in the hearing is all about. First you  
5 determine the maximum magnitude earthquake that can occur.  
6 Dr. Slemmons is the main witness regarding that particular  
7 methodology. In order to do that, you have to know the  
8 length of the zone or the fault that you are talking about.

9 JUDGE EILPERIN: But he concluded that the peak  
10 ground acceleration would be 0.67 g, not assuming that the  
11 zones would be blocked off.

12 MR. WHARTON: Dr. Slemmons' testimony goes to the  
13 magnitude earthquake that can occur, basically. He may have  
14 some testimony in there regarding peak ground acceleration,  
15 but that was not the thrust of his testimony. He was there  
16 to testify regarding maximum earthquake from length of fault  
17 and to different methods of determining maximum earthquake.

18 A point here is that if the OZD is 240 kilometers  
19 long, you have one magnitude earthquake based upon Slemmons'  
20 fractional method, say. If you go into -- let us just refer  
21 to the fractional method. 240 kilometers long, using Dr.  
22 Slemmons' fractional method, that is, the 22 percent, and  
23 given that he did change his testimony, we are talking about  
24 a earthquake, a mean plus one standard deviation earthquake  
25 of 7.7, and a mean earthquake of 7, using Dr. Slemmons'

1 method as he testified to, which we will get into later.

2 JUDGE JOHNSON: Have you just misspoken? A mean  
3 earthquake of 6.7, is that what you meant to say?

4 MR. WHARTON: No, the mean earthquake with the OZD  
5 with a length connection to Coronado Banks, as he testified,  
6 or 247 kilometers, he testified the mean earthquake is 7.0,  
7 and the mean plus one standard deviation earthquake is 7.7.  
8 That is using the 22 percent method. Now, using the 22  
9 percent method, and using the segments, we look at the  
10 South Coast Offshore Zone of Deformation, the one directly  
11 offshore from SONGS, taking 22 percent of 62 kilometer  
12 rupture length, you are going to reduce that magnitude  
13 substantially. Now, I don't think we should be looking at  
14 reducing it on paper. We should really have to look at what  
15 is a conservative figure, but given that if it is segmented,  
16 what the Board is leading us to is that it is segmented,  
17 therefore we only have to look to 22 percent, or some other  
18 methodology.

19 What the Board is saying is, it is not going to  
20 rupture past the segments, but only look at one segment at a  
21 time.

22 JUDGE JOHNSON: Well, I am not sure, Mr. Wharton,  
23 that I understand exactly everything Mr. Slemmons was trying  
24 to -- Dr. Slemmons was trying to do, and I intend to inquire  
25 of the Staff, but it seems to me that he was using a different

1 method -- I mean, he was mixing his methodologies.

2 MR. WHARTON: That is right.

3 JUDGE JOHNSON: He did not apply the fractional  
4 break to the segments.

5 MR. WHARTON: No, he didn't.

6 JUDGE JOHNSON: So when he talked about  
7 magnitudes based on the segments, he used the full break  
8 along the entire segment.

9 MR. WHARTON: That is correct.

10 JUDGE JOHNSON: Presumably if he had used his  
11 fractional break for assessing magnitudes on the segments,  
12 he would have gotten much smaller values, the order of 5.  
13 Do you agree with that?

14 MR. WHARTON: Yes.

15 JUDGE JOHNSON: So, using short, segmental  
16 lengths, it seems to me that he was taking -- I assume that  
17 what he thought he was doing was taking a conservative  
18 approach to determining the maximum that might be attributable  
19 to such a segment, whereas when he considered the zone as a  
20 full length feature, he then applied his fractional --

21 MR. WHARTON: That is correct.

22 JUDGE JOHNSON: -- method to that. He never, as I  
23 know, went to the end, which presumably he would consider a  
24 conservative end, of taking a full length break, along the  
25 full length of the OZD.

1 MR. WHARTON: No.

2 JUDGE EILPERIN: Which, for completeness, it would  
3 have seemed that me might have done that if he were taking a  
4 full-length break along an entire 37-kilometer segment, so  
5 it is not -- I don't understand everything he was doing, but  
6 what do you believe the Board -- if the Board had -- the  
7 Board said it was segmented, but it also quoted Slemmons'  
8 testimony for the fractional break, in other words, the  
9 Board seemed to accommodate the idea that even though there  
10 was a segmented -- or the feature is segmented, the OZD  
11 is segmented, they didn't throw out Slemmons' testimony on a  
12 fractional break method for a 240-kilometer long feature.

13 In other words, it seemed to me the Board was -- I  
14 mean, it said it was segmented, but it was not denying the  
15 possibility that the entire feature could behave as a single  
16 fault, because it accepted Slemmons' fractional method.

17 MR. WHARTON: That seems to be inconsistent findings  
18 by the Board, and I agree with you, when they refer to Dr.  
19 Slemmons' testimony, they are referring to the way Dr.  
20 Slemmons did it, but at the same time, in the same decision,  
21 they are saying that it is segmented. I believe what the  
22 Board is attempting to do is add a, I believe, artificial  
23 standard of conservatism here by saying there is nothing to  
24 worry about because it is segmented, but we will listen to  
25 Dr. Slemmons anyway.



1 JUDGE JOHNSON: Well, are they not making a finding  
2 relative to contention one on the nature or the characteris-  
3 tics of the OZD? Wasn't contention one the one that asked for  
4 the characteristics of the OZD, including its length?

5 MR. WHARTON: Yes.

6 JUDGE JOHNSON: And if the testimony submitted in  
7 response to that particular contention led them to the  
8 finding that the OZD was in fact segmented, do you think it  
9 was error for them to make that finding?

10 MR. WHARTON: Yes. Absolutely.

11 JUDGE JOHNSON: Even when the contention says what  
12 is in litigation is the nature of this OZD?

13 MR. WHARTON: It was never contemplated by any of  
14 the parties, and again, stipulations between -- previous  
15 stipulations on the record that are part of the record and  
16 part of the decision, are binding on all the parties.  
17 Agreements between the parties and what the parties agree to  
18 going into the hearing, what was stipulated to on the  
19 hearing, was admitted in the hearing by the attorneys, is  
20 binding on all of the parties.

21 For the Board to turn around and disregard the  
22 previous Board's ruling and decision, disregard the  
23 stipulation of the parties, to disregard the stipulation of  
24 the parties on the record that it was not at issue, and then  
25 decide an issue that it was segmented, is error.

1 JUDGE EILPERIN: Okay, so you are saying that<sup>32</sup> the  
2 finding of segmentation and the phrase that the OZD cannot --  
3 the parts, if you will, of the OZD, cannot be disassociated,  
4 are just irreconcilably inconsistent with one another.

5 MR. WHARTON: Yes. The point again is, is that  
6 one of the points the Intervenors did on cross-examination  
7 was that -- is that Dr. Slemmons' 22 percent method. This  
8 will take too long. I am not going to get into that. It is  
9 a little esoteric. I don't want to really talk about that.

10 JUDGE EILPERIN: What do you think you have to show  
11 for irreparable injury? Do you have to show anything more  
12 than you were denied cross-examination of the NRC Staff, and  
13 we might rule with you on the merits of that issue, or do you  
14 have to make some sort of showing that the information  
15 available does show some serious seismic risk?

16 MR. WHARTON: Yes. What I believe the showing  
17 should be is that the regulations set forth what is required  
18 of the Board to do before they can issue the license.

19 A summary would be, they have to determine the  
20 capability of all significant geologic features. In this  
21 case, they have not done that. They have not determined the  
22 capability, nor have they litigated the Cristianitos fault.  
23 You have a serious unanswered question, the answer to which  
24 is significant to the public health and safety.

25 JUDGE EILPERIN: Okay, but I thought you had said

1 earlier on in your argument that you would not have termed it  
2 arbitrary for the Licensing Board to have found on the basis  
3 of the evidence that was in the record that the Cristianitos  
4 fault was not capable.

5 MR. WHARTON: Mr. Chairman, they did not decide the  
6 issue.

7 JUDGE EILPERIN: I know they didn't decide the  
8 issue. That is why I asked you the question.

9 MR. WHARTON: Yes.

10 JUDGE EILPERIN: I wanted to know if it was your  
11 contention that had they decided the issue, it would have  
12 been -- the overwhelming weight of the evidence would have  
13 been that the Cristianitos in fact was a capable fault, or  
14 that the weight of the evidence, the preponderance of the  
15 evidence, whatever standard you want to use, I just wanted  
16 your estimation of which way the evidence of record tilted on  
17 that issue.

18 MR. WHARTON: Well, Mr. Chairman, when I answered  
19 the question as to whether or not it would be arbitrary, I am  
20 looking at my experience in stating whether the finding of a  
21 Board is arbitrary in a legal sense. I am not second-  
22 guessing all of the evidence. What happens in these hearings  
23 is the Board can hear it one way, and I can disagree with that  
24 and I would disagree with their finding that it was not  
25 capable, but that does not mean that it is arbitrary, and that

1 is the answer I was giving. The mere fact of that does not  
2 mean that it is arbitrary. It is a disagreement on facts, and  
3 I would strongly disagree with that.

4 JUDGE EILPERIN: All right.

5 MR. WHARTON: It was not litigated. We were not  
6 able to get into all of the facts. That is the point. It is  
7 not resolved. That is one area. The other area is we are  
8 looking at the Offshore Zone of Deformation. We have the  
9 testimony of Dr. Slemmons. That -- Dr. Slemmons dramatically  
10 changed his testimony on the stand -- well, without even  
11 changing his testimony he indicated first, using his fault  
12 segment method, that the figures he gave were mean figures,  
13 or mean earthquakes, that is all they were, and that they  
14 could be exceeded 50 percent of the time.

15 When asked to get into what the mean plus one  
16 sigma would be, he added the 0.7, and I believe --

17 JUDGE JOHNSON: Would you explain what you mean by  
18 a mean earthquake?

19 MR. WHARTON: Yes.

20 JUDGE JOHNSON: Doesn't it mean -- don't you really  
21 mean the mean of the data?

22 MR. WHARTON: It is the mean of the data, that is  
23 correct.

24 JUDGE JOHNSON: There is no such thing as a mean  
25 earthquake or a one plus sigma earthquake, is there? I have

1 never --

2 MR. WHARTON: No -- well, that was my terminology  
3 and it is a lawyer's terminology and not a scientist, and I  
4 apologize, because it isn't really accurate. What we are  
5 saying is, yes. Dr. Slemmons has a methodology. He gathers  
6 all of his data, and the figures he comes up with are the mean  
7 of that data, to account for the scatter in the data, the  
8 possible error --

9 JUDGE JOHNSON: Was it Dr. Slemmons' opinion that  
10 using his method in order to determine the magnitude of an  
11 event, that you add one sigma to it?

12 MR. WHARTON: I am sorry?

13 JUDGE JOHNSON: Was it Dr. Slemmons' opinion that to  
14 use his method properly you should take the mean value and  
15 add one standard deviation to it?

16 MR. WHARTON: I believe -- I will read Dr. Slemmons'  
17 testimony, and this is significant, because this is the  
18 decision that we are asking the Board to make, is, is Dr.  
19 Slemmons describes what his mean value is. He then describes  
20 what his mean plus one value is. Now, I believe it is up to  
21 the policy maker, the person who is making the decision, to  
22 decide what is conservative.

23 JUDGE JOHNSON: Well, hold on. It seems to me what  
24 we are doing now, though, is listening to and interpreting  
25 the testimony of a recognized expert in the field.

1 MR. WHARTON: Yes.

2 JUDGE JOHNSON: And he is applying a method, and  
3 we are not seismologists, albeit we are called upon to make  
4 decisions in the area. My question to you was what was the  
5 technique that this individual proposed, as an expert? Did  
6 he propose taking the mean value and adding one sigma to it,  
7 or did he propose to establish the magnitude by simply taking  
8 the mean value of his curve? That was the question I asked  
9 before.

10 MR. WHARTON: That is not clear. It is not clear  
11 because he didn't get to saying. He did make a decision at  
12 the end, saying that he thought  $M_s$  7 was conservative. He  
13 did testify to that.

14 JUDGE JOHNSON:  $M_s$  7.

15 MR. WHARTON:  $M_s$  7, assigned as a safe shutdown  
16 earthquake --

17 JUDGE JOHNSON: Presumably then he felt that  
18  $M_s$  7.7 was very conservative.

19 MR. WHARTON: No. No. I don't think that is what  
20 we are saying. What I am saying is, is that he also  
21 testified that he is not making a policy decision as to what  
22 degree of risk the public is willing to accept. He  
23 testified to that. He is testifying as the seismologist.  
24 The decision as to what degree of risk the public is willing  
25 to accept is up to the Licensing Board and this Appeals Board.

1           Is that one of the things that you have to consider,  
2           the seismologist is not saying license the plant. He is making  
3           it a consideration. Okay, what he says here is he is asked  
4           a question regarding his assigning  $M_S$  6.8 as the maximum  
5           magnitude earthquake on the OZD with a 40-kilometer length,  
6           and the Rose Canyon fault zone with a 37-kilometer length.

7           Asked a question: Going again to the maximum  
8           magnitude 6.8, you stated that was a mean value, is that  
9           correct? Witness Slemmons: Yes. (Question) And by mean  
10          value, that means that 50 percent of the earthquakes could be  
11          above that, 50 percent would be stopped? Answer: That is  
12          correct.

13          Below, given that data -- I am finishing his  
14          answer. If we did want to find the 84th percentile with this  
15          data, would we add 0.694 to the figure on the particular  
16          chart? He answers: Plus or minus. That is to account for  
17          the data, for the scatter in the data.

18          The question then comes up, too, and I believe  
19          Dr. Brune in his testimony presents it very well. Dr. Brune  
20          is an eminent seismologist. He states: Slemmons has used a  
21          regressive curve developed by Slemmons to assign magnitudes  
22          to ruptures of a given length. In the calculations given by  
23          him in Appendix E, however, he uses the mean curve rather  
24          than the curve for a mean plus one standard deviation. Thus  
25          the magnitude values he cites for a given rupture length would

1 be expected to be exceeded 50 percent of the time. The mean  
2 plus one standard deviation is 0.694 magnitude units higher  
3 than the mean for a strike-slip earthquake. For example, for  
4 an assumed rupture length of 62 kilometers for the South Coast  
5 Offshore Zone of Deformation, the mean estimated magnitude is  
6 7.7, expected to be exceeded 50 percent -- I am sorry.  
7 7.07, expected to be exceeded 50 percent of the time. The  
8 mean plus one standard deviation is 7.77, expected to be  
9 exceeded by about 16 percent of the data for faults with a  
10 rupture length of 62 kilometers; and the mean plus two  
11 standard deviations is 8.46.

12 The question here, as Dr. Brune again testifies,  
13 I am not testifying as to what is safe. I am testifying to  
14 these are the standards here. Dr. Slemmons testified, these  
15 are the standards we are presenting to you.

16 Now, what we are asking the Board to look at is,  
17 in order -- what we are saying is, in order for you --

18 JUDGE EILPERIN: Excuse me one moment.

19 MR. WHARTON: Yes, sir.

20 JUDGE EILPERIN: You have used up your 45 minutes.  
21 Why don't you try and finish up within five minutes.

22 MR. WHARTON: Five minutes.

23 JUDGE EILPERIN: And we will still give you some  
24 time for rebuttal.

25 MR. WHARTON: Fine. I think we discussed Dr.



1 Slemmons' testimony, just in reviewing and finalizing his  
2 testimony. Dr. Slemmons did change his testimony, and  
3 decided that his -- the method he was using in the written  
4 testimony was really not appropriate. He then said, I would  
5 now delete that particular sentence, and not use that  
6 particular adjustment. He was there referring to a 7.5  
7 percent of the rupture length adjustment. He goes on to say  
8 that instead he would add 0.694 to the magnitude obtained  
9 from the 22 percent rupture length, and then, all we have to  
10 do with that information is, for example, in the case of 275  
11 kilometer length, that would yield a maximum magnitude of  
12 approximately 7.7, given one standard deviation. So, doing  
13 the OZD with a 200-kilometer length, the mean is 6.9, mean  
14 plus one is 7.6.

15           The OZD with a length connection to Coronado Banks,  
16 247 kilometers, the mean is 7, the mean plus one is 7.7.  
17 The OZD with a length extending to Agua Blanca fault, 300  
18 kilometers, the mean is 7.1, the mean plus one is 7.8.

19           What we have, then, is the testimony if we look at  
20 the mean plus one standard, we have a range of 7.4 to 7.9,  
21 as the maximum magnitude earthquake, given. Now, the Board  
22 has to decide which is the appropriate standard. Given that  
23 particular information, then we go to Dr. Boore. Dr. Boore  
24 is the only independent, truly independent seismologist to  
25 testify regarding peak ground acceleration, from maximum

1 magnitude.

2 JUDGE JOHNSON: Do you include in that characteriza-  
3 tion -- and you added something that I cut off -- how about Dr.  
4 Devine? Mr. Devine?

5 MR. WHARTON: Dr. Devine did not testify -- that is  
6 what I was getting to -- did not testify as to maximum ground  
7 acceleration from correlation with the maximum magnitude,  
8 7.5 and above.

9 JUDGE JOHNSON: Did he have any comments to make  
10 regarding the significance of magnitude? Do you recall?

11 MR. WHARTON: I don't recall Dr. Devine's testimony  
12 regarding that.

13 JUDGE JOHNSON: Perhaps at transcript page 5323,  
14 where he sort of indicated that it was not essential, the  
15 magnitude -- assignment of magnitude was not essential to the  
16 ultimate determination of ground motion?

17 MR. WHARTON: I do not claim to be a scientist.  
18 There was an awful lot of assigning of maximum magnitudes.  
19 I don't know why it was done if it is not necessary to do  
20 that.

21 JUDGE JOHNSON: Well, the USGS letter that appears  
22 in the SER, do you recall what it had to say regarding the  
23 association of ground motion with earthquakes through the  
24 assignment of magnitude?

25 MR. WHARTON: No, I do not. There is such a volume

1 of evidence in this record I can't remember all of it. I  
2 am afraid I do not remember that. If you could refer it, I  
3 might be able to respond to the --

4 JUDGE JOHNSON: Go ahead.

5 JUDGE EILPERIN: Why don't you try and conclude your  
6 argument, Mr. Wharton?

7 MR. WHARTON: Very well. The point we are making  
8 is, is that the methodology adopted, developed by Boore and  
9 Joyner, is state-of-the-art methodology, the latest methodolo-  
10 gy using the latest data. The Board makes much of that there  
11 is not -- of a statement by -- in the Boore's paper that  
12 there is not optimal data within -- if I could find the --  
13 for distances less than 40 kilometers from earthquakes with  
14 M greater than 6.6, the predictions are not constrained by  
15 data, and the results should be treated with caution.

16 The Board makes much of that statement, but that  
17 statement applies to any method for determining peak ground  
18 acceleration. The testimony that runs through the entire  
19 hearing is that there is a lack of data regarding the ground  
20 acceleration from close-in earthquakes with high magnitudes.  
21 This report is no different than any other report in the  
22 record. In fact, this report is the latest report, and the  
23 only one that was submitted to full peer review, and  
24 published by the Bulletin of the Seismological Society of  
25 America.

1           Using Dr. Boore's methodology, going to a 7.5  
2 earthquake, we have peak ground acceleration of 1.1 g, far  
3 in excess of the design of the plant itself.

4           Going even to a 7 earthquake, we still have peak  
5 accelerations of 0.82 g, I believe it is. This again is  
6 using the mean plus one standard, and this is a decision we  
7 are again asking the Board to make.

8           The public health and safety, I believe, of San  
9 Diego, is worth more than a mean standard, or a 50-50 chance.  
10 I think we are entitled, the people of San Diego and the  
11 intervenors are entitled to at least a 16 percent chance.

12           We are asking the Board, then, to stay this  
13 decision, because the evidence reveals at the present time  
14 critical errors made by the Licensing Board which are  
15 essential to the safety of the plant, which those -- given  
16 those errors, what has to be assumed under the regulations,  
17 that the earthquake can exceed the design basis of the plant,  
18 and that that particular earthquake could happen at any  
19 particular time, because one cannot say when it is going to  
20 happen. All we do know is that one is going to happen, but  
21 we don't know when.

22           JUDGE EILPERIN: Thank you very much, Mr. Wharton.

23           Mr. Pigott, are you next up? You and Mr. Chandler  
24 can each have five more minutes, since we did have Mr.  
25 Wharton run over a bit.

1 ORAL ARGUMENT OF DAVID R. PIGOTT ON BEHALF OF APPLICANTS,  
2 SOUTHERN CALIFORNIA EDISON COMPANY, ET AL

3 MR. PIGOTT: Thank you, Mr. Chairman.

4 In order to properly respond to Mr. Wharton's  
5 arguments, I think it is necessary to first drop back a bit  
6 and get ourselves in the context of what we are actually  
7 doing here. We are at a very early stage of the appeal  
8 process. I wanted to set a little bit of context, remind us  
9 exactly where we are here.

10 We have completed over 6,000 pages of transcript  
11 of actual hearings on the seismic issues, and the low power  
12 issues. We have over 70 exhibits on seismic and low power.  
13 We have a Board decision that has carefully considered the  
14 record, and the proposed findings of all the parties, and we  
15 have a low power license issued by the Director of NRR, based  
16 on the findings he has been required to make under Section  
17 50.57.

18 What we are looking at now is a very limited motion,  
19 a motion for a stay pending the full appeal procedure. Mr.  
20 Wharton correctly states the four elements. He has, of  
21 course, the burden of proving each of the four elements, and  
22 in order to perhaps move to what some would consider the most  
23 serious of the elements, the showing of prevailing on the  
24 merits, let me first address the other three, more legalistic  
25 perhaps, elements.

1 First of all, the irreparable harm, which in fact  
2 for a stay motion may be the most crucial of the issues to be  
3 addressed. Applicants would submit that the Intervenors have  
4 made no showing of irreparable harm. First of all, the cases  
5 do state what the standard of irreparable harm is. I would  
6 cite the case of The State of New York vs. NRC, 550 F. 2nd 745,  
7 a 1977 case, which states that irreparable harm must be  
8 something that is actual and imminent, and not something remote  
9 and speculative.

10 JUDGE EILPERIN: Is your position that the  
11 Intervenors have to show that there is an earthquake that is  
12 imminent before they can prove irreparable injury?

13 MR. PIGOTT: That would be an impossible standard.  
14 I think that --

15 JUDGE EILPERIN: But is it yours?

16 MR. PIGOTT: No, I wouldn't impose an impossible  
17 standard on Mr. Wharton. No, I think that they must make some  
18 kind of a showing, though, that the error is so egregious in  
19 this instance, and the risk would be so high that it would  
20 amount to irreparable harm.

21 There is no showing of that in this case.

22 JUDGE EILPERIN: Well, the Commission suspended the  
23 license in Diablo Canyon, low power license in Diablo Canyon  
24 because of seismic issues. What kind of standard for  
25 irreparable injury would you derive from that action of the

1 Nuclear Regulatory Commission?

2 MR. PIGOTT: Well, there was potential consequences,  
3 I think, from a seismic event, but the issue was not seismic  
4 for the withdrawal. The issue there was failure to construct  
5 according to design.

6 JUDGE EILPERIN: Well, but the design dealt with  
7 seismic issues.

8 MR. PIGOTT: But I don't think there is -- it  
9 was an implementation of the design basis. It was not --  
10 there is no finding, for instance, in the Diablo case, that  
11 the -- I believe it was 0.72 that they are dealing with in  
12 that case, -- is an inadequate design basis. Had the  
13 Commission and the Staff determined that the Diablo plant was  
14 constructed, appropriately constructed for a 0.72 design  
15 basis, or seismic design basis, they wouldn't have reached  
16 the problems that they are in, but their problem is that they  
17 apparently did not build according to the level that they  
18 were supposed to build to.

19 Here we are talking about whether or not the design  
20 that has been arrived at is adequate, and that is a much  
21 different issue.

22 JUDGE EILPERIN: So the question, the standard  
23 would be whether there is serious question whether or not the  
24 plant is design to withstand the maximum probable earthquake,  
25 the design basis earthquake?

1 MR. PIGOTT: At this stage, I would have to say so,  
2 and if you want to question the design, as I think the  
3 Intervenors do, I think your standard would have to be some  
4 showing that the actual seismic design landed upon, the 0.67 g,  
5 is so egregiously in error that it constitutes an  
6 unacceptable risk to proceed with the low power, and the  
7 testing, and ultimately to full power pending appeal, and in  
8 the context of this case, I would think that is the showing  
9 that has to be made. The simple fact that there may be -- or  
10 the simple allegation that there may be error in the  
11 determination I don't think rises to the level of irreparable  
12 harm. I think there has to be something very serious, and if  
13 you can't show imminency, and I would have to agree that you  
14 cannot show imminency of an earthquake, you would certainly  
15 have to show that the damage, that there is a good  
16 possibility that the damage would be so egregious that it is  
17 unacceptable for the public health and safety. I would submit  
18 that no showing along those lines has been made, or even  
19 attempted.

20 JUDGE EILPERIN: Mr. Wharton said he did attempt it  
21 but for one thing he was foreclosed by the Licensing Board  
22 from pursuing the issue of the Cristianitos fault. What is  
23 your response to that?

24 MR. PICOTT: Well, the Cristianitos fault, first of  
25 all he has no showing with respect to the capability of the



1 Cristianitos fault, and therefore I would say he does not --  
2 he has not made any kind of a showing that a serious mistake  
3 has been made by the Board. He quibbles with the foreclosure  
4 which we will be very pleased to deal with on the brief, but  
5 when one gets into the actual merits, as we are supposed to be  
6 at this stage, there is nothing shown that was not  
7 considered by this Board.

8 JUDGE EILPERIN: Well, why don't you first get into  
9 the merits of whether or not the Licensing Board was correct  
10 when it ruled that that issue was foreclosed from its  
11 consideration.

12 MR. PIGOTT: Okay. I would submit that the Board  
13 has been correct in its handling. The Cristianitos fault is  
14 certainly nothing new to anybody who has been involved in the  
15 San Onofre proceeding, all the way back to the early 1960's.  
16 There was a site visit yesterday. You saw it. It looms out  
17 of the ground not too distant from the plant. To even  
18 conceive that that has not been investigated, and investigated  
19 thoroughly over the last 20-plus years just is incredible.  
20 It has obviously been investigated. Now, it has never been a  
21 precise issue in a hearing, and there is good reason for that.

22 The way you get to an issue is that you show some  
23 basis to contest a Staff or an Applicant position. It has been  
24 investigated at the construction permit stage. It has been  
25 investigated at the Unit 1 stage, and although seismicity and

1 general geology has been opened at all those proceedings,  
2 there has never been articulated any basis to controvert the  
3 activity or the inactivity of the Cristianitos fault.

4 JUDGE EILPERIN: Are you saying that that issue did  
5 not fall within any of the contentions that were in issue at  
6 the operating license stage? Wasn't the basis of the  
7 Licensing Board's decision?

8 MR. FIGOTT: Well, I was going to specifically note  
9 that the Intervenors attempted to raise the issue of the  
10 Cristianitos fault in this proceeding, and I would cite you  
11 to a document entitled "Revised contentions submitted by  
12 Intervenors FOE et al," dated May 5, 1981. There they  
13 proposed a subcontention H, and I will read it, again  
14 quoting, "Applicants have failed to perform the required  
15 investigations to determine whether the Cristianitos fault  
16 meets the definition of capable fault as set forth in 10 CFR  
17 Part 100, et cetera," end of quote. We responded and  
18 countered that no basis had been shown for an issue, and I  
19 would cite document "Applicants' response to revised  
20 contentions of Intervenors FOE et al submitted May 5," and  
21 which was date May 12, 1981. The Board ultimately rejected  
22 that particular proposed issue in its revised prehearing  
23 conference order of May 28, 1981, for lack of specificity.

24 So, within a month of the time we went to hearing on  
25 this case, the Intervenors did not have sufficient evidence to

1 raise an issue with respect to the capability of the  
2 Cristianitos fault.

3 JUDGE JOHNSON: Mr. Pigott, how would you say the  
4 Licensing Board in the construction permit hearing dealt with  
5 the Cristianitos fault for SONGS 2 and 3? Were they obliged  
6 to make a finding with regard to its capability, in your  
7 opinion, under Part 100?

8 MR. PIGOTT: A specific finding? No more than they  
9 were required to make a specific finding to each and every  
10 fault that may be within a five-mile radius or pick the  
11 area of criticality. They, I think, were required to make  
12 specific findings with respect to the matters in contest, and  
13 the Cristianitos was not a matter in contest. They did,  
14 however, accept the SER, and the SER had gone through a  
15 complete review, and had been the basis of Intervenors  
16 formulating their issues, and leading through to the ultimate  
17 hearing and decision.

18 JUDGE JOHNSON: Well, a Licensing Board at the  
19 construction permit stage is obliged, is it not, to make  
20 certain site suitability findings whether they are contested  
21 or not? It was my understanding.

22 MR. PIGOTT: Well, to the extent they made those  
23 necessary findings in the appropriate -- they must be somewhat  
24 general form. I am confident that they were, and that they  
25 would have been based on the Staff's review, and the documents

1 officially filed in the docket. What I am getting to is it  
2 was -- the finding would not have been made in the same manner  
3 as the findings on a contested geologic feature, and because  
4 it was not a contested geologic feature, I would not expect to  
5 see the same degree of specificity in the findings, although  
6 I would agree that certainly the Board looked at site  
7 suitability and did whatever review it felt necessary to  
8 assure itself that it was a safe and suitable site.

9 Now, I don't have the whole of that particular  
10 record in mind that I can go back with any more particularity,  
11 doctor.

12 JUDGE JOHNSON: Well, I was thinking of the  
13 possible threshold that a contention at this stage might have  
14 to meet if there had been a finding at the earlier stage.  
15 Now, if -- I am fully appreciative that it was not litigated  
16 at the construction permit stage.

17 MR. PIGOTT: Well, what I think is significant in  
18 answer -- or at this point, is that at the operating license  
19 prehearing, within a month of when we went to hearing, and  
20 bearing in mind that we have a period of time from December of  
21 1977 through May of 1981 that discovery was open, because we  
22 fell into that period of time when TMI was the focal point,  
23 the discovery was open for that full period of time, and  
24 intervenors availed themselves of discovery. Now coming up  
25 to within a month of hearing, intervenors are attempting to

1 raise an issue with respect to the capability of the fault,  
2 and they still don't have anything. They don't have a basis  
3 for it.

4 JUDGE EILPERIN: That wasn't the basis on which the  
5 Board excluded the issue, however.

6 MR. FIGOTT: The Board excluded -- well, the Board  
7 excluded the issue on the basis that there was no specificity.  
8 In other words, there were no facts to support an opening up.  
9 What they did do, and what Applicants believe was appropriate,  
10 is that they formulated, in effect, an update issue. I direct  
11 you to issue number one, and the question was whether data --  
12 I am paraphrasing -- whether data gathered from earthquakes  
13 that occurred subsequent to the construction permit showed the  
14 seismic design basis to be inadequate, and that was really an  
15 open door type of issue. If there was anything that happened  
16 after the construction permit that Intervenors felt bore on the  
17 seismic design basis, they were free to go after it, and that  
18 was the issue, for instance, under which Dr. Biehler's  
19 testimony comes in. He talks about the seismic events that  
20 occurred between the construction permit stage and the time  
21 we come to the operating license stage, in order to afford the  
22 Board a basis for determining that the site is still safe and  
23 still suitable.

24 JUDGE EILPERIN: Well, Mr. Simons' testimony also  
25 sought to deal with post-construction permit events, did it

1 not?

2 MR. PIGOTT: Yes, it did. What we have to -- I  
3 think what we have to remember when we get right to Mr. Simons'  
4 testimony, is that it was heard. There was preliminary  
5 argument that it be offered subject to a motion of proof, and  
6 subject to motions to strike, and in fact that was what  
7 occurred, and the transcript -- well, there was from pages  
8 4778 through 4859, a good deal of transcript with respect to  
9 the cross-examination of precisely the testimony that we see  
10 appended to the Intervenor's brief.

11 JUDGE EILPERIN: What about Mr. Wharton's point that  
12 he wasn't able to pursue cross-examination with the NRC staff?

13 MR. PIGOTT: I am not aware that he was precluded.  
14 If he was precluded, he was precluded only with respect to  
15 pre-1973 events. I know of no ruling, and obviously it is a  
16 long transcript, but I cannot think of anyplace where Mr.  
17 Wharton was ever precluded from cross-examining with respect  
18 to seismic events happening post-construction permit. Prior  
19 to construction permit, yes, that was beyond the scope of the  
20 issue, and they may have been excluded, but again, I don't  
21 have one presently in mind.

22 JUDGE EILPERIN: But don't you have to relate the  
23 post-CP events to events before that time? Aren't they just  
24 too interrelated to make that sort of a distinction?

25 MR. PIGOTT: Not really. The distinction was very

1 easily made by Applicants and Staff in looking at -- when you  
2 get to a point where you have a suitable site, and you are  
3 then looking at whether or not there are additional events  
4 that may bear on the suitability of that site, you can  
5 segregate them by earthquake and date and location and examine  
6 them, and then the question becomes, is there anything from  
7 these earthquakes that causes us to go back and reflect on the  
8 way we made our decision previously, and that is the way it  
9 was approached, and there was nothing found in the earthquakes  
10 that were examined by Applicant and Staff that would indicate  
11 there was any relationship to the Cristianitos fault. The  
12 circle-drawing exercise, and that is all it was, there isn't  
13 a person in this room who couldn't have done that exercise,  
14 proved absolutely nothing. It proved that there had been  
15 microseismic or small earthquake events at various locations.  
16 That didn't prove anything with respect to capability of a  
17 fault.

18 JUDGE EILPERIN: Okay, you don't think that Mr.  
19 Wharton should have taken the Board's ruling on foreclosure  
20 as foreclosing him from cross-examining Staff witnesses as to  
21 post-CP events dealing with the capability of the Cristianitos  
22 fault?

23 MR. PIGOTT: Absolutely not, and I would be very  
24 surprised if there was any portion of the transcript that  
25 reflects that he was cut off from examining with respect to

1 post-construction permit events. I mean, that was the issue.

2 JUDGE EILPERIN: But he should have taken it to mean  
3 that he was cut off from relating to pre-construction permit  
4 events?

5 MR. PIGOTT: Oh, no. If he could have shown there  
6 was anything that would breathe life back into the  
7 Cristianitos, if he had met that threshold, he could go any-  
8 where with it, but he never got there.

9 The record is now without Mr. Simons' testimony. I  
10 think in looking at this, the stay, and the stay context,  
11 irreparable harm, et cetera, this Board can take note of the  
12 fact that the earthquakes listed in Mr. Simons' proposed  
13 testimony in fact were the subject of considerable testimony.

14 Dr. Biehler didn't just locate where they might have  
15 come to the surface. He build a special crustal -- or  
16 developed a special crustal model in order to develop the  
17 focal mechanisms, the sense of motion with respect to those  
18 earthquakes, and to determine whether or not there was any  
19 possibility that they could be linked to the Cristianitos.  
20 That was reviewed by Staff. In fact, I don't have the cite to  
21 Mr. Biehler's precise page reference, but in order for the  
22 earthquakes in question to have been associated with the  
23 Cristianitos, the whole of that Capistrano Embayment would  
24 have had to be moving in an uphill direction. It just belies  
25 the rules of physics to associate the events that were in fact



1 examined with the Cristianitos fault. There were three --  
2 in preparing for this, I went through and found that Dr.  
3 Biehler had addressed seven different earthquakes, a swarm of  
4 five, and two independent earthquakes, in his testimony, and  
5 Mr. Wharton refers to eight events and nine events, either in  
6 his motion or his brief, going back to Mr. Simons' testimony,  
7 which was what I assumed his source.

8           The only two events that were not covered were two  
9 very microseismic events. One was a 2.2 event in 1977, and  
10 another was a 0.0 event in 1977, and those are the only two  
11 that we can by a process of elimination show that he may  
12 possibly be referring to.

13           JUDGE EILPERIN: Have you had an opportunity to look  
14 at the chart that Mr. Wharton had in his brief?

15           MR. PIGOTT: Not in any depth. If I looked at it  
16 now, I may recall it, but frankly, I am not prepared to  
17 respond to his brief at this time.

18           JUDGE EILPERIN: So you don't know whether that  
19 chart is accurately or inaccurately drawn.

20           MR. PIGOTT: Can I see which one you are looking at?

21           Just seeing it brings back a flood of memories. I  
22 would not want to comment on that one at this time. It was a  
23 complicated discussion at that point.

24           JUDGE JOHNSON: When you say at that point, is this  
25 the cross-examination of Dr. Biehler that you are referring to

1 in the transcript?

2 MR. PIGOTT: I believe so. I believe that comes up  
3 in the cross-examination.

4 MR. WHARTON: Yes, it does. He gives his error bar  
5 figures.

6 MR. PIGOTT: It is also necessary, though, in look-  
7 ing at that, to bear in mind the earlier testimony of Dr.  
8 Ehlig with respect to the fault, because Dr. Ehlig set the --  
9 as it were -- the broad framework of the geology of the area  
10 from which the Board could proceed with some intelligence, to  
11 look at more detailed aspects of the area. So it is -- you  
12 have to take the whole thing before it really has a full  
13 meaning.

14 JUDGE JOHNSON: I have a question of you, Mr.  
15 Pigott, with regard to something in your brief at page four,  
16 and I think it probably goes to the next issue, the last  
17 paragraph, you say the Board's ruling with respect to the  
18 segments, and I am now referring to segments on the OZD, you  
19 are apparently referring to those segments.

20 MR. PIGOTT: Yes.

21 JUDGE JOHNSON: Was one of several necessary steps  
22 in reaching the final determination of  $M_s$  7 as the  
23 appropriate maximum magnitude, and I wonder what you meant by  
24 that particular statement, in the sense that it appears that  
25 you are saying that segmentation is required if you are going

1 to have a determination of  $M_s$  7.

2 MR. PIGOTT: Well, I think before answering that, and  
3 I don't want to avoid that question, let me come back to it.  
4 But in approaching this whole area of the segment issue, we  
5 have to be careful of what we are talking about when we mean  
6 segmentation. Mr. Wharton referred back to a couple of  
7 conversations on the record that we had, and I think if you  
8 actually read the words, you will see that the record you  
9 will see, I talk about that we are not purely segmented. If  
10 we had undertaken a case of segmentation, it would have been  
11 given the capability of the Newport-Inglewood Zone of  
12 Deformation, and the maximum event on that zone, what would be  
13 the appropriate design basis. Then you would have to move  
14 down to the middle section, the South Coast Offshore fault,  
15 and take a look at it independently, and determine what its  
16 maximum effect could be on the plant, and likewise for the  
17 Rose Canyon fault. You would get far different answers than  
18 the answers we see in the record now.

19 So when that is what we say we were not quarreling  
20 with the previous model that was used only for establishing  
21 whether or not there was an adequate design basis.

22 Segmentation when looked at at that -- in that light,  
23 is a far different thing than talking about a zone composed  
24 of three segments which are not disassociated, but because  
25 of their geologic characteristics have different earthquake

1 generating capabilities, and that is what Applicants were  
2 showing, that is what the Board understood, and that is really  
3 what the Board's decision says, that this is a zone, it is  
4 in segments. The segments are not disassociated, but they do  
5 have different geologic characteristics, and those different  
6 geologic characteristics bear on their earthquake-generating  
7 capability, and that does not do violence either to the issue  
8 or to the pre-existing USGS model, so we get into a  
9 characterization or definition argument when one simply says  
10 they segmented the zone, and you have got to go beyond that.

11 Now, when I make the statement on page four of the  
12 brief that it was a necessary step, necessary -- perhaps I  
13 could put another word in and say that it was an appropriate  
14 step, that it was appropriate under the terms of the issue,  
15 to look at the geologic characteristics of the overall zone  
16 in order to assess its earthquake-generating capability and  
17 come to that ultimate decision that the magnitude 7 is the  
18 appropriate maximum magnitude.

19 JUDGE EILPERIN: Mr. Pigott, on your view of the  
20 principles of res judicata, collateral and foreclosure, would  
21 you be foreclosed from quarreling at the operating license  
22 stage with the USGS model that formed the basis for the  
23 construction permit hearing, and if not, why not?

24 MR. PIGOTT: Well, I would have to -- I  
25 unfortunately would have to ask for more questions. What

1 particular portion of the model? We never accepted the  
2 geology that would get to that model as being absolutely  
3 correct.

4 JUDGE EILPERIN: I understand that. All I am saying  
5 is, you were there and had an opportunity to litigate the  
6 issue, and I was wondering under your view of foreclosure  
7 where Mr. Wharton's client who was not there is foreclosed at  
8 operating license stage --

9 MR. PIGOTT: Absolutely not.

10 JUDGE EILPERIN: -- from raising the Cristianitos  
11 fault issue. I was wondering if you consider yourself  
12 foreclosed from quarreling with the USGS model at the  
13 operating license stage.

14 MR. PIGOTT: Absolutely not.

15 JUDGE EILPERIN: You are not foreclosed?

16 MR. PIGOTT: No, I am not foreclosed. We would not  
17 be foreclosed, and I would cite as authority for that one of  
18 the most horrible moments in my legal career, which was when  
19 the Licensing Board at the construction permit struck the  
20 Applicants' testimony with respect to the geology of the OZD.  
21 We tried to put in evidence on the geology to show that the  
22 model was conservative, and it was struck as not being within  
23 the issue, so I would --

24 JUDGE EILPERIN: But Mr. Wharton wasn't even there  
25 to have his testimony ruled out.

1 MR. PIGOTT: Well, now we are getting into a legal  
2 question as to how res judicata should be applied in an  
3 administrative proceeding, and I would argue that the precise  
4 identity of parties need not be followed with respect to res  
5 judicata in this kind of a proceeding, that certainly as the  
6 Board points out, res judicata is a concept to be applied  
7 according to the situation that it is trying to be used in,  
8 and in this situation, the idea that every person who is not  
9 a party to a construction permit stage has a right to come in  
10 and in effect relitigate everything that may have happened or  
11 may have -- there may have been an opportunity to have happen  
12 at an earlier stage, just doesn't seem reasonable to me, and  
13 that is something that I would expect we would be approaching  
14 in our briefs on the overall appeal.

15 However, I would say that at this stage, foreclosure  
16 can be set aside in favor of looking at the merits, and  
17 following the guidelines of 2.788(e), and when we get back  
18 to the merits, I think we find that there just aren't any.

19 JUDGE EILPERIN: I have difficulty putting your  
20 argument together how you are not foreclosed but Mr. Wharton  
21 is foreclosed. It just seems that there is an identity of  
22 parties in your case. There isn't an identity of parties in  
23 his case, and that yours should be an a fortiori case in  
24 terms of foreclosure if it is the principals that --

25 MR. PIGOTT: Well, I guess what we are skipping over

1 is that even when Mr. Wharton comes in at the operating  
2 license stage, if he had been able to show some factual  
3 basis for relooking at the geology, we would have had no  
4 defense, but there is no such basis, and so after all the --  
5 after everything is filed, and we get to hearing, then we  
6 get these characterizations.

7 JUDGE EILPERIN: But you are not putting a changed  
8 circumstances burden on yourself to bring up a quarrel with  
9 the USGS model.

10 MR. PIGOTT: That is correct, but there is -- the  
11 Cristianitos is a lot different from the offshore zone of  
12 deformation geology. I mean, they were handled in different  
13 matters, in different means. I would say we definitely --  
14 I can only go back and say that the reason I would not  
15 consider it to be foreclosed on litigating the geology of the  
16 OZD under the CP stage is because when we tried to do it, we  
17 were told it wasn't a part and it was thrown out. Now, one  
18 could hardly say that we have a determination at that stage  
19 with respect to the geology of the OZD. They said they  
20 weren't deciding it.

21 JUDGE EILPERIN: But in any event, your position  
22 is that you were consistent in the operating license stage  
23 with the USGS model of the OZD in any event.

24 MR. PIGOTT: Yes. Absolutely.

25 I believe I must point out with respect to the

1 agreements that Mr. Wharton alleges between Counsel, I would  
2 simply take you back to the prehearing conference back in  
3 April of 1981. I would cite you to pages approximately 310  
4 through 320 of that transcript, specifically at 312, 313, as  
5 a part of the prehearing discussion, I am discussing a  
6 proposed issue number four, which in fact with very few word  
7 changes was the issue that was ultimately adopted at the  
8 hearing, and I there state, specifically state that there are  
9 no qualifiers on the scope of the geology to be examined with  
10 respect to this issue.

11 JUDGE EILPERIN: Excuse me. You have about two more  
12 minutes.

13 MR. PIGOTT: Okay. Again, at page 317, we talked  
14 about being free to address the geology as we see it under  
15 this issue, and the Staff reflects the same understanding at  
16 pages 315 and 316. It is also found in the written  
17 references, the one I cited earlier filed by Applicants on  
18 May 12, 1981.

19 Let me skip very quickly and I shan't attempt to  
20 explain our view of the world as seen by Dr. Slemmons. I  
21 would only point out that Dr. Slemmons was but a part of the  
22 basis that the Board relied on in coming to its determination  
23 of magnitude 7. There is also the testimony of Dr. Stuart  
24 Smith. There is the testimony of Dr. Ehlig. There is the  
25 testimony of Dr. Allen. There is the testimony of Mr. Heath.



1 There are at least a half a dozen witnesses testifying that --  
2 competent witnesses testifying that magnitude 7 is the  
3 appropriate maximum magnitude. In order to prevail on the  
4 merits, not only does all that evidence have to be  
5 disregarded. Dr. Slemmons has to be convinced that he is  
6 wrong, and that he has to change his mind. I think the record  
7 is replete with statements that Dr. Slemmons keeps saying, but  
8 I wouldn't do it that way.

9 With respect to the balance of the --

10 JUDGE JOHNSON: I have got to interject a question  
11 here, and I am -- maybe my chairman will allow you another  
12 extra minute. On page seven of your brief, you are discussing  
13 the testimony of Dr. Boore of USGS, who Mr. Wharton has  
14 mentioned earlier, and you are relating Dr. Boore's change in  
15 the peak plus one standard deviation acceleration for an  
16 M 7 event at eight kilometers, and you are saying that he left  
17 out the data beyond 50 kilometers, he would come up with a  
18 value of 0.57, and I am asking whether that is something Dr.  
19 Boore would himself do, or is that something that or the  
20 Applicant suggests that he do? In other words, I asked Mr.  
21 Wharton about what Mr. Slemmons would do and now I am asking  
22 you what Dr. Boore would do. Is this idea of leaving out the  
23 data past 50 kilometers an approach that Dr. Boore would  
24 subscribe to, or is this something that he was asked to do  
25 because he was on the stand?

1           MR. PIGOTT: Let me back up First of all, there  
2 were two adjustments, and with respect to both adjustments,  
3 I detected -- I don't believe the record reflects any  
4 opposition to the use of these adjustments for applying Dr.  
5 Boore's work to the San Onofre proceeding. First of all,  
6 there was the difference between his using a single highest  
7 horizontal reading, and the industry -- normal industry  
8 procedure of using an average of the two horizontals. That  
9 resulted in a reduction of 13 percent, and there was no  
10 quarrel between himself and Dr. Campbell, who also testified  
11 on that adjustment.

12           Secondly, with respect to the exclusion of data over  
13 50, over 50 kilometers, much of that data was also low  
14 magnitude events, and I believe that by the time we had  
15 reached Dr. Boore, it had been pretty well accepted, or at  
16 least set forth that one of the important things to look at  
17 in these regression analyses was that you had an appropriate  
18 data set, and one of the things to look at was to try and get  
19 data that was very close in. The Intervenors argued to a  
20 great extent that we couldn't get data close enough. On the  
21 other hand, it was pretty much accepted that data a long way  
22 away was not of much value.

23           Now, Dr. Boore in his publication warns the reader  
24 that his work is not to be used with respect to large  
25 magnitude earthquakes in the near field, which is what we are

1 talking about. So although I could not say that Dr. Boore  
2 would volunteer, because remember he was brought in on a  
3 subpoena without a lot of preparation for the specific San  
4 Onofre situation, but I would say he had no reluctance, in  
5 fact he had preprepared with him, and we might have discussed  
6 it prior to then, but there is no great reluctance in coming  
7 up with these figures, after having excluded data from  
8 beyond 50 kilometers.

9 JUDGE JOHNSON: Okay, thank you. You better finish  
10 up your summary.

11 JUDGE EILPERIN: I think Dr. Gotchy has a question  
12 first.

13 JUDGE GOTCHY: Mr. Pigott, my reading of the record,  
14 and I am not a seismologist or a geologist, when all of the  
15 argument is done with regard to peak ground acceleration and  
16 what the appropriate response spectrum is and what the  
17 appropriate magnitude is, the thing that concerned me is the  
18 record, I feel particularly with regard to the request for a  
19 stay, in my mind does not -- with the exception of the  
20 testimony by Dr. Idriss -- does not really get to the question  
21 of the probability of exceeding their design basis earthquake  
22 that the plant was built for.

23 In other words, in deciding if there is going to be  
24 irreparable harm in my mind, I have to have some reasonable  
25 assurance that given if there is an earthquake, what the

1 probability of exceeding that earthquake and doing damage to  
2 the plant and placing the public at risk is.

3 If I read Dr. Idriss's testimony correctly, he  
4 talks about where the design basis earthquake spectrum in  
5 the frequencies of concern for a large structure like San  
6 Onofre 2, the probabilities of exceeding that thing are on  
7 the order of one in 100,000 to one in a million. How would  
8 you propose that I consider this kind of testimony in  
9 reaching my decision on whether or not there is a possibility  
10 of irreparable harm to the public, in the event that stay  
11 were not granted?

12 MR. PIGOTT: Well, I would have to say that at this  
13 time I cannot remember anyone other than Dr. Idriss addressing  
14 the probability of exceedence. In assessing that probability,  
15 I would wonder if the Board is in any different situation  
16 than it would be with any safety-related issue. Whether it is  
17 a seismic event that may cause the alleged irreparable harm,  
18 or malfunction of some component within the reactor itself,  
19 we are talking about safety, and that would be -- I would  
20 say the same kind of a probability kind of an approach, and  
21 perhaps I can only answer it by throwing the question back  
22 into the context of the merits, and that being that you really  
23 don't get to that question unless you think, really think  
24 that there is a significant chance that a very severe mistake  
25 has been made by the Board, and that they have left open a

1 risk that just cannot be accepted, and in this instance, I  
2 believe you do have to balance that, how strong is the showing,  
3 and I would contend that the most charitable characteristic  
4 would be that there may be a scintilla of evidence, if one is  
5 to agree that Dr. Slemmons doesn't know how to use his own  
6 data.

7 But other than that, there is no hard evidence which  
8 you could point to where the Board would say oh, yes, if we  
9 had seen that, it would have been different, or that they have  
10 made some egregious misinterpretation of a witness's testimony.  
11 That isn't there, and in the absence of that, I really wonder  
12 whether you get to that question. That question has loomed,  
13 in any event, ever since the decision came down, and that  
14 decision is decided, I guess as a matter of policy, by  
15 allowing the low power license to become immediately  
16 effective.

17 So I really don't think that that is the kind of a  
18 question we should be looking at here in the absence of a  
19 tremendous showing on the substantive issues that the Board  
20 made a terribly egregious error, and that has not been shown,  
21 and given the lack of such a showing, I would think you would  
22 have to go along with the idea that the Board is entitled to  
23 a presumption of being correct on its findings, that the  
24 Commission in establishing the immediate effectiveness rule  
25 for low power licenses, and for that matter its own

1 determination prior to the time we get a full power license,  
2 has recognized whatever risk may be there, and has decided  
3 that it is inappropriate, and I really can't answer much more  
4 than that.

5 JUDGE EILPERIN: Thank you, Mr. Pigott.

6 We will take about a five-minute break, and then we  
7 will hear from Mr. Chandler. Off the record.

8 (Brief recess)

9 JUDGE EILPERIN: On the record. Mr. Chandler, you  
10 have about 25 minutes. You can proceed.

11 ORAL ARGUMENT OF LAWRENCE CHANDLER ON BEHALF OF THE NUCLEAR  
12 REGULATORY COMMISSION STAFF

13 MR. CHANDLER: Thank you, Mr. Chairman.

14 Members of the Board, you have heard the arguments  
15 by both the Intervenors and the Applicants. I would like to  
16 start off first by touching on the fourth factor to be  
17 considered, the public interest factor.

18 I think it is sufficient to note that unless the  
19 Intervenors have sustained their burden of persuasion with  
20 respect to the other factors, it would be our view that the  
21 public interest favors maintaining the validity, if you will,  
22 upholding the decision by the Licensing Board authorizing the  
23 issuance of an operating license for San Onofre Unit 2.

24 Going back now to the first factor, the likelihood  
25 of prevailing on the merits, I think I would like to reiterate

1 our position with respect to the lack of probative value of  
2 the alternate grounds assigned by the Licensing Board for  
3 excluding from evidentiary consideration the testimony of  
4 Mr. Simons.

5 JUDGE EILPERIN: I didn't see in your brief any  
6 reference to the foreclosure argument that the Licensing  
7 Board found persuasive. Have you abandoned that on appeal  
8 now?

9 MR. CHANDLER: I wouldn't say that we are abandoning  
10 that approach on appeal, Mr. Chairman, at all. However, we  
11 believe that the approach selected by the Intervenor in  
12 support of his application for stay wholly ignored the  
13 independent grounds offered by the Board, namely the lack of  
14 probative value. We don't really dispute the reasoning of the  
15 Board in finding that consideration of Mr. Simons' testimony  
16 was foreclosed.

17 JUDGE EILPERIN: If you haven't abandoned it, why  
18 didn't you argue it?

19 MR. CHANDLER: We didn't perceive any need to  
20 separately argue that point. We think, and indeed we would  
21 prefer the argument that the Board raised with respect to  
22 probative value. I think perhaps if I were writing the  
23 initial decision, I would not have written it quite as it  
24 was written by the Board in this proceeding, and perhaps it  
25 is broader than I would have liked, but I don't intend to

1 suggest, and we did not intend to suggest that we are wholly  
2 abandoning foreclosure, rather that we -- I guess strongly  
3 prefer would be the best way to state it, the question of its  
4 probative value.

5 JUDGE EILPERIN: Do you see any relationship  
6 between the validity of the foreclosure argument and the  
7 Commission's moving towards promulgating a rule dealing with  
8 what subjects should be foreclosed at the operating license  
9 stage which could have been litigated at the construction  
10 permit stage?

11 MR. CHANDLER: I don't necessarily think we should  
12 infer from the Board's decision such a connection. I  
13 certainly think it is a commendable goal. I think it has  
14 long been recognized that there are certain matters which are  
15 appropriately litigated in a construction permit proceeding,  
16 and those which are more appropriately deferred until an  
17 operating license stage, and at the same time those which at  
18 the operating license stage are foreclosed because they  
19 should have been litigated earlier on. I think fundamental  
20 questions of site suitability such as the one that is before  
21 the Board now, for example, on the question of the  
22 Cristianitos fault is the kind of an issue which is best  
23 resolved at a construction permit stage, subject, of course,  
24 under any application of principles of foreclosure, to  
25 changed circumstances or overriding public policy. I would



1 not dispute those as --

2 JUDGE EILPERIN: Well, there is no doubt that it is  
3 best decided at the construction permit stage. I just wonder  
4 why it is that the Commission thinks it has to promulgate a  
5 rule to exclude particular subjects at the operating license  
6 stage if in fact the failure to raise issues such as these  
7 at the construction permit stage are in fact excluded by  
8 general legal principles of foreclosure.

9 MR. CHANDLER: I cannot really speculate on what  
10 the Commission has in mind. I represent the Staff of the  
11 Commission, but not the Commission itself.

12 JUDGE JOHNSON: Well, with regard to the construction  
13 permit and the Cristianitos fault, didn't the Licensing Board  
14 there have a statutory obligation to determine whether or not  
15 the Cristianitos was capable?

16 MR. CHANDLER: I don't believe they did.

17 JUDGE JOHNSON: Under Part 100 they don't have that?  
18 I mean, certainly Cristianitos was recognized. It was  
19 mentioned in that opinion.

20 MR. CHANDLER: I don't believe that the Board had  
21 the obligation in its initial decision to very specifically  
22 articulate a basis for at least the implicit finding that  
23 the Cristianitos fault was not of concern with respect to the  
24 siting of this facility. I think it is clear that Licensing  
25 Boards are not required to undertake a wholly de novo review

1 of the application, although they are obligated to review it  
2 for purposes of making their findings. They are not charged,  
3 if you will, with duplicating the review that is performed  
4 traditionally by the Staff, by the ACRS, if you will.

5 The decision, moreover, that the Licensing Board  
6 rendered in the construction permit proceeding, as Mr. Pigott  
7 earlier noted, one would expect to be much more expansive, if  
8 you will, with respect to matters of controversy, although  
9 the Board did touch on all the other matters it was obligated  
10 to make findings on.

11 JUDGE JOHNSON: Well, is not the Board obligated  
12 under Part 100 to make site suitability findings?

13 MR. CHANDLER: Yes, it is, and it was obligated at  
14 the construction permit stage. One has to bear in mind that  
15 Part 100 Appendix A was not really applicable in this time  
16 frame. The facility was reviewed under the proposed -- then  
17 proposed Appendix A, the construction period. Was obligated,  
18 if one now looks to the Part 100, to assure that the  
19 maximum vibratory ground motion was appropriately selected.

20 JUDGE JOHNSON: Okay, thank you.

21 JUDGE EILPERIN: What about Mr. Wharton's argument  
22 that he was effectively denied the right to cross-examine the  
23 NRC Staff on the capability of the Cristianitos fault?

24 MR. CHANDLER: That is one point which I had  
25 intended to get to in a moment, Mr. Chairman. Let me respond

1 now. I simply do not recall an instance in which Mr. Wharton  
2 was so precluded by a ruling by the Licensing Board. One has  
3 to recognize, however, the distinction between the data which  
4 is really being considered here, in the context, for example,  
5 of Mr. Simons' testimony.

6 Mr. Simons' testimony had wholly intertwined data  
7 of the pre-1973 and post-1973 origin. The Staff Safety  
8 Evaluation Report has specific evaluations of post-1973  
9 events, particularly the 1975 and 1977 events in the  
10 general vicinity, if you will, of the Cristianitos fault.

11 Certainly those were fair game.

12 JUDGE EILPERIN: Which were -- the post CP events?

13 MR. CHANDLER: Yes. Yes, the 1975 and 1977 events,  
14 and I have no recollection of any ruling by the Board  
15 precluding on grounds of foreclosure any examination into those  
16 areas, but again, it is a rather voluminous record, and I  
17 don't profess to have ready knowledge of all the ruling that  
18 the Board has made, but I have no recollection of such a  
19 ruling.

20 JUDGE JOHNSON: Well, he mentioned the testimony of  
21 Mr. Cardone?

22 MR. CHANDLER: Cardone, yes.

23 JUDGE JOHNSON: That was not allowed.

24 MR. CHANDLER: I do not -- as I said a moment ago,  
25 I have no recollection of any ruling by the Board precluding

1 cross-examination of Mr. Cardone with respect to the post-  
2 CP events that are discussed and evaluated in the Staff  
3 Safety Evaluation Report. Indeed, it reflects an evaluation  
4 among others of the testimony of Dr. Biehler.

5 JUDGE JOHNSON: No, my understanding of what Mr.  
6 Wharton said, and obviously the person to ask about what he  
7 said is coming up next, but if the Cardone testimony on the  
8 capability of the Cristianitos was not allowed, then he  
9 didn't have -- I mean, it was not even -- I thought he said  
10 that this testimony was not even allowed to be submitted.

11 MR. CHANDLER: Well, my recollection is that it is  
12 in evidence in this proceeding.

13 JUDGE JOHNSON: Okay, thank you.

14 MR. CHANDLER: Returning for a moment to Mr. Simons'  
15 testimony, the Board I think very appropriately found that  
16 Mr. Simons was not qualified as an expert in the field in  
17 which he was tendered. He possesses a bachelor of science  
18 degree in geology and geophysics, but he does not practice in  
19 a real sense in either of those areas. He states in the  
20 record, and he was subject to full examination by all parties,  
21 and by the Board in this proceeding, that he is responsible  
22 for the processing software and researching seismicity patterns  
23 in northern Baja California and San Diego.

24 He calls upon a computer to give him data, which he  
25 then causes to be placed on a map. That appears to be the

1 extent of his professional activities at this point in time,  
2 and in that sense, and to the extent that his testimony does  
3 that, perhaps he is qualified, although there were a number of  
4 questions that were raised on cross-examination of Mr. Simons  
5 by I believe it was Applicants' Counsel regarding the data and  
6 possible errors in the data caused by transposition of the  
7 data from the computer printout onto his maps, is one  
8 example.

9           There was a question about the data base that he  
10 used, several questions, particularly with respect to the  
11 change in data gathering, if you will, in the 1975 time frame.

12           JUDGE EILPERIN: His testimony is there for  
13 everyone to read in the record. Does it really matter one  
14 way or the other whether it was formally stricken or not  
15 formally stricken?

16           MR. CHANDLER: In the sense that the Board  
17 certainly could have said yes, we admit the testimony, and we  
18 will give it whatever weight we consider appropriate, no,  
19 there really is no real distinction.

20           I think it clear, however, that under the  
21 standards of the Commission's rules that only reliable  
22 evidence is to be admitted in NRC proceedings, and I think it  
23 clear from the Board's findings, which we believe is amply  
24 supported by the record, that Mr. Simons' testimony simply  
25 cannot be considered reliable testimony. I would go on to

1 point out that it is not even relied upon to any extent by  
2 the only other witness I believe offered by Intervenors with  
3 respect to this question, Mr. Legg. Only passing reference is  
4 made. Indeed, Mr. Legg sees fit to rely primarily, and I  
5 think Mr. Wharton acknowledged earlier during his argument,  
6 on the testimony of Applicants' witness, Dr. Biehler.

7 In short, then, we believe that the Board's  
8 determination to exclude from evidentiary consideration the  
9 testimony of Mr. Simons, particularly on the grounds of lack  
10 of probative value, is well founded.

11 Intervenors then move on to express their surprise  
12 with respect to the Board's findings on the Offshore Zone of  
13 Deformation. I think perhaps we may have almost a semantic  
14 problem, but we believe the Board's decision is wholly  
15 consistent with the concept of a zone of deformation  
16 extending at least 240 kilometers with several features which  
17 should not be disassociated.

18 I think the citations that we have provided in our  
19 response to Mr. Wharton's brief clearly reveal that very early  
20 on, certainly at the beginning of the hearing, the parties  
21 recognized or should have recognized that all of the  
22 characteristics of the OZD were open for consideration. The  
23 length of the OZD was a specific concern. The geological  
24 and seismological characteristics were of concern. This is  
25 very clear from even a casual reading of contention 4, which

1 is the particular contention in issue here. So we simply  
2 cannot understand why Intervenors now should profess such  
3 surprise at the decision that the Licensing Board reached.

4 Indeed, Mr. Pigott earlier alluded to a number of  
5 pages that he -- of the transcript of the April 29, 1981  
6 conference. I think if one additionally makes reference to  
7 transcript page 328 of that date, one finds that Intervenors  
8 in fact fundamentally agreed with the statement of contention  
9 4. This agreement follows statements by Applicants' Counsel  
10 with respect to their understanding of what is embraced by  
11 this contention, and a consistent interpretation of Staff  
12 Counsel, my own understanding of what that contention was to  
13 embrace. The only dispute we had at that time with respect  
14 to the wording of the contention related to the simple  
15 inclusion of the letter "h" before OZD. The Applicant  
16 wishing to have it referred to as a hypothesized zone of  
17 deformation, and the Staff then arguing no, we really shouldn't  
18 be relitigating whether this is a zone of deformation or not  
19 a zone of deformation. That matter was disposed of.

20 JUDGE EILPERIN: Doesn't at least one of Dr.  
21 Slemmons' methods of calculating magnitude assume that the  
22 OZD is in fact blocked off into particular segments?

23 MR. CHANDLER: I don't think he goes so far as to  
24 say it is blocked off, but I think Dr. Slemmons' testimony  
25 recognizes that an approach to evaluating a maximum earthquake

1 is to consider segments of the OZD, and he uses, for example,  
2 the Newport-Inglewood Zone of Deformation, the South Coast  
3 Offshore Zone of Deformation, and the Rose Canyon fault zone  
4 as discrete areas which he then analyzes, that is true.

5 JUDGE EILPERIN: As purely discrete areas.

6 MR. CHANDLER: That is right, but I don't think he  
7 in his testimony at any point states that one should or should  
8 not view the OZD as segmented in the sense of being blocked  
9 off and disassociated, if you will, one segment from the  
10 other.

11 JUDGE JOHNSON: I would like to ask you a question  
12 about the probative value of Dr. Slemmons' testimony. You  
13 probably heard me discuss with Mr. Wharton the sort of range  
14 of values that he came up with, and I think at that time it  
15 was pointed out that he didn't look at the smallest  
16 possibilities, and that would have been applying his  
17 fractional method to the segment, nor did he reach the  
18 maximum magnitude, and that would have been applying the 100  
19 percent break to the full length of the OZD.

20 MR. CHANDLER: That is correct.

21 JUDGE JOHNSON: So, considering what he might have  
22 done, he reached values from somewhere approximately five to  
23 values that might have been as high as eight, which more or  
24 less covers the waterfront.

25 I had a hard time finding which -- what of Dr.



1 Slemmons' testimony I should latch onto in terms of its real  
2 value. Would you like to give me any guidance?

3 MR. CHANDLER: I think that one has to truly look  
4 at Dr. Slemmons' testimony in its entirety, because Dr.  
5 Slemmons applied seven (sic), I believe, different approaches  
6 in an effort to assess the maximum magnitude, if you will,  
7 for an earthquake on the OZD, and I think none can be read in  
8 isolation. I think that was a point that Dr. Slemmons made  
9 very clear in his evaluation, and during his testimony on the  
10 stand.

11 Now, he reaches a different range, which is wholly  
12 appropriate, and he justifies, then, his reliance on the  
13 conservatism, or if you will, his finding of the conservatism  
14 of a magnitude 7 as well, but I don't think one properly  
15 should take a segment out of Dr. Slemmons' testimony and  
16 consider that his approach, because I think he is --

17 JUDGE EILPERIN: Slemmons can't be disassociated,  
18 not just the OZD.

19 MR. CHANDLER: That is correct. Thank you.

20 JUDGE EILPERIN: What about -- I had a problem with  
21 his indirect method by fault segment lengths. Just looking  
22 at that gives particularized assumed rupture lengths. Does  
23 that or does it not assume that those segments are in fact  
24 blocked off at the end of those lengths?

25 MR. CHANDLER: I cannot state what Dr. Slemmons

1 would respond to your question, how he would respond to your  
2 question. I don't think he intends to say it is blocked off  
3 but he does view each segment independently. That is to say  
4 that it would not rupture beyond that discrete segment, but I  
5 am troubled by the use of the word "blocked off." I don't  
6 know that that should be inferred from his testimony at that  
7 point.

8 JUDGE EILPERIN: Well, I guess I am troubled by  
9 defined lengths and then analyzing defined length. I just  
10 don't know what that means if it doesn't mean that it is in  
11 fact blocked off.

12 MR. CHANDLER: I believe that Dr. Slemmons in that  
13 part of his evaluation is using the Applicants' data. I think  
14 it reflects his evaluation. After all, the Staff, being  
15 charged with this review, has not essentially generated new  
16 approaches or methods or data for this review. What the  
17 Safety Evaluation Report reflects and what Dr. Slemmons'  
18 testimony reflects, is his evaluation of the analysis done  
19 by the Applicants, and I assume that Dr. Slemmons at that  
20 point is relying on the Applicants' characterization of each  
21 of these elements, if you will, and I prefer to use that term,  
22 of the Offshore Zone of Deformation.

23 JUDGE JOHNSON: How do you interpret the -- what I  
24 presume is testimony of Mr. Devine appearing at the bottom of  
25 page G-4 of the SER, the last line of which is, "continued

1 efforts to define a specific magnitude have, in our judgment,  
2 rapidly diminishing returns." Previous to that he had been  
3 discussing the various methods.

4 MR. CHANDLER: I think what that reflects is  
5 somewhat of a disagreement in approach, if you will, between  
6 the US Geological Survey and the Nuclear Regulatory  
7 Commission. If one recalls the construction permit  
8 proceeding, the design basis earthquake, if you will, was not  
9 established on the basis of a magnitude of an earthquake.

10 Indeed, that is why in this proceeding, contention  
11 4 was written the way it was written, in terms of magnitude.  
12 Rather, at the construction permit stage, the approach, and  
13 the Geological Survey was fundamentally responsible for that  
14 approach, was to use the intensity description.

15 JUDGE JOHNSON: Well, that is not what you suggest  
16 he is saying here, is it, that you use intensity?

17 MR. CHANDLER: I don't know what you say I am  
18 saying? No. He is reflecting his criticism, if you will,  
19 the Geological Survey's concerns with respect to relying more  
20 strongly on magnitude rather than other approaches. I don't  
21 think he suggests a different approach, but I think what he  
22 has tried to do at that point is reflect concerns that the  
23 survey has, relying on magnitude, the Staff does not share  
24 those concerns. The Staff was insistent at the operating  
25 license stage that the magnitude of an earthquake along the

1 offshore zone be determined.

2 JUDGE JOHNSON: Is this position of the Staff in  
3 every place that you are aware of? Are you aware of any  
4 efforts by the Staff to associate ground motion with  
5 geologic features without going through the intermediate  
6 step of a magnitude?

7 MR. CHANDLER: I think the recent Appeal Board  
8 decision, I believe it is ALAB 667, in the Seabrook  
9 proceeding, indicates that a reliance there too was placed on  
10 intensities, modified Mercalli intensities, and less  
11 emphasis was placed on the magnitude. I believe, however,  
12 that the Staff is of the opinion that magnitudes are the  
13 appropriate nomenclature, if you will, or method.

14 JUDGE JOHNSON: Do you recall a cite or a quote of  
15 Staff testimony in that particular decision where the Staff  
16 indicated that it would -- if there were enough data, and  
17 that it might be possible to go direct from ground motion  
18 data to ground motion data characteristics of a particular  
19 site, if you knew the characteristics, the tectonic  
20 characteristics of the region?

21 MR. CHANDLER: That decision, I believe, was  
22 issued less than a week ago, Dr. Johnson. I haven't really  
23 had a chance to review it, and I am not that familiar with the  
24 testimony in that proceeding that I could --

25 JUDGE JOHNSON: Some of the things you are saying

1 here seems to be at odds with what the Staff witnesses said  
2 at that particular case, and I can't get into that, so I  
3 will withdraw the first question.

4 MR. CHANDLER: I don't believe it is at odds. It  
5 may be my problem in speaking in seismologists language.

6 JUDGE EILPERIN: Okay. You have about five more  
7 minutes. Could you give us your views of what kind of  
8 standard is to be applied in determining whether or not  
9 irreparable injury has been shown? Everyone seems to agree  
10 that the Intervenors don't have to prove that there is an  
11 earthquake right around the corner. What kind of risk do you  
12 think is the applicable standard for irreparable injury in  
13 this kind of context?

14 MR. CHANDLER: Well, I agree with the statements of  
15 both Intervenors' Counsel and Applicants' Counsel, that one  
16 cannot find a standard in NRC decisions that is very clear on  
17 this point. I think one can derive an appropriate standard,  
18 however, from a decision by the Atomic Safety and Licensing  
19 Board in the Matter of Metropolitan Edison Company, et al,  
20 Three Mile Island Nuclear Station Unit 2. It is ALAB 486,  
21 at 8 NRC 9, at page 46, a 1978 decision in the context of  
22 reversing the Licensing Board on a question of the probability  
23 of a crash of a large aircraft into the facility due to its  
24 proximity to Harrisburg International Airport.

25 The Appeal Board had the occasion to consider

1 whether the License should remain in place pending the  
2 reopened proceeding which it itself was going to preside over.  
3 I think they stated the question in these terms, and this is  
4 a paraphrase, I believe. Will continued operation of the plant  
5 over the period required to complete the normal appeal  
6 process be consistent with the requirement that there be  
7 reasonable assurance that the public health and safety will  
8 not be endangered?

9 In other words, is there some flaw so fundamental  
10 to the findings of reasonable assurance that the public health  
11 and safety will not be endangered, the fundamental findings  
12 of 10 CFR 50.57, that that funding can no longer be  
13 maintained?

14 JUDGE JOHNSON: Well, would you use that to make a  
15 distinction between this case, perhaps where we have a  
16 presumption of properly -- of proper design and construction  
17 for a particular magnitude earthquake and particular ground  
18 motion spectrum, and the Diablo Canyon case, where the --  
19 because of questions which have been raised regarding the  
20 construction practice and the design practice, that there can  
21 be no presumption of earthquake resistance capability in that  
22 plant?

23 MR. CHANDLER: I wouldn't necessarily carry it to  
24 the point of a presumption, but I think what one has to read  
25 in the suspension of that license, is that the Commission at

1 this point lacks the reasonable assurance which is necessary  
2 to sustain the operating license for that facility, and those  
3 circumstances simply do not exist in this proceeding.

4 I think if one reads the very voluminous testimony  
5 in this proceeding, testimony by many different witnesses on  
6 behalf of the Applicants and the Staff, independent of the  
7 testimony of Dr. Slemmons, independent of the testimony of  
8 Drs. Luco and Dr. Boore, confirming the adequacy and  
9 conservatism in the assignment of a magnitude 7 as the  
10 appropriate earthquake, and affirming the conservatism in the  
11 assignment of 0.67 g as the maximum vibratory ground motion,  
12 that one must find that reasonable assurance still exists.

13 There is in the record independent of these  
14 challenged portions, if you will, ample evidence to support  
15 the Board's findings on these matters.

16 I would just like to turn very briefly, if I may --

17 JUDGE EILPERIN: Just, you can have about one more  
18 minute.

19 MR. CHANDLER: Thank you.

20 With respect to the third factor, harm to other  
21 parties, just to, if you will, update the Appeal Board from  
22 our formal reply dated February 11 to the Application for  
23 Stay, the California Coastal Commission did on February 16  
24 issue an amendment to the Applicants' permit which had been  
25 sought to more specifically recognize the exclusionary control

1 question that Mr. Wharton raises in his application for stay.  
2 As I did point out in our reply, there are a sufficient number  
3 of senior reactor operators now licensed, and with respect to  
4 the independent quality assurance verification program, that  
5 program has produced interim results which have been reviewed  
6 and found acceptable by the Staff for purposes of low power  
7 operation for this facility. The program is continuing with  
8 respect to matters pertaining to full power operation at  
9 this time.

10 I believe, in short, members of the Board, that the  
11 Intervenors simply have not sustained their burden of  
12 persuasion with respect to any of the four factors, and for  
13 that reason a stay should not issue. Thank you.

14 JUDGE EILPERIN: Thank you, Mr. Chandler. Mr.  
15 Wharton, you can have ten minutes for rebuttal.

16 REBUTTAL ORAL ARGUMENT OF RICHARD WHARTON ON BEHALF OF  
17 INTERVENORS CARSTENS, FRIENDS OF THE EARTH, ET AL

18 MR. WHARTON: If I may, some rebuttal on what I  
19 think are more significant issues, without going into too much  
20 detail. Regarding the significance of the Board's finding  
21 that the OZD was segmented, there was a question that was  
22 asked before, and I wasn't really able to get to the record.  
23 I don't think I responded as well as I could have. Going to  
24 the partial initial decision, the Board's -- the significance  
25 the Board attached to it is made clear, and as follows -- this



1 is on page 30 of the PID.

2 Various geologic characteristics of the OZD,  
3 particularly its length, are relevant to its potential for  
4 a high magnitude earthquake. As a general proposition, long  
5 throughgoing faults are capable of generating large earth-  
6 quakes, while short, segmented faults tend to produce smaller  
7 earthquakes.

8 They go on. In the present case, Intervenors sought  
9 to prove that the OZD is a single, throughgoing fault about  
10 400 kilometers long. The Applicants and Staff maintain that  
11 the OZD is only about 240 kilometers long, and that it is  
12 segmented into three discrete sections.

13 The first part of that particular sentence states  
14 that the Board understands the significance of that the OZD  
15 is throughgoing.

16 The second part of the sentence just simply  
17 misstates the Intevenors' position, and misstates the  
18 Applicant and the Staff's position. The Intervenors are  
19 not maintaining throughgoing fault. It may be a semantic  
20 question. We are saying it is an OZD -- that a rupture on  
21 the OZD, the earthquake is commensurate with the length of the  
22 OZD, as found by the USGS. We are not arguing whether it is  
23 a throughgoing fault. The Applicants and the Staff to my  
24 knowledge did not maintain going into the hearing, nor did they  
25 maintain at the hearing that it was segmented into three

1 discrete sections, so I think it is clear there where the  
2 Board's error is.

3 Now, going to Dr. Devine's testimony, that too was  
4 a question that was raised, and that adds some, I believe,  
5 some assistance in understanding the error in the Board's  
6 findings here. Mr. Devine is, as you know, assistant director  
7 for engineering geology. He testified -- this is at  
8 transcript page 5333, that we argued -- this is the USGS he  
9 is referring to -- that three discrete zones should not  
10 represent individual fault zones, and earthquake magnitudes  
11 dependent on each of those individual segments, but instead  
12 should consider them all in one segment for the purpose of  
13 estimating earthquake size, and that is the point here. Any  
14 decision that is made by the Licensing Board here should have  
15 focussed their attention on the entire length, and how long  
16 the length was.

17 JUDGE JOHNSON: Wasn't that simply a description of  
18 what went in the past, that particular part of Devine's  
19 testimony?

20 MR. WHARTON: Yes, he is explaining what the USGS  
21 position was at the construction licensing hearing, and the  
22 basis for the stipulation that was entered into.

23 JUDGE JOHNSON: Is that still the USGS position?

24 MR. WHARTON: As far as I know, it is.

25 I don't know that there has been a change in that particular

1 position, but the point is, is that is what the position was  
2 for the purpose of the stipulation that was entered into.  
3 That is what we are claiming is res judicata on this  
4 particular issue, and for the Board to change that, it is  
5 error.

6 JUDGE EILPERIN: Mr. Wharton, on the irreparable  
7 injury question, do you think you have to have, or the  
8 record has to have affirmative evidence that San Onofre cannot  
9 withstand an earthquake that should be the appropriate design  
10 basis earthquake, and if so, where have you adduced that kind  
11 of evidence?

12 MR. WHARTON: Yes. We have the evidence -- again,  
13 Dr. Slemmons is the main witness on magnitude earthquake. Dr.  
14 Slemmons' testimony, if you accept as the one standard  
15 deviation as being the conservative properly -- appropriately  
16 conservative standard, that is that the chance of exceeding  
17 this earthquake is only 16 percent as opposed to 50 percent,  
18 if you look at Dr. Slemmons' testimony, you are looking at  
19 his predictions, given one standard deviation of from 7.4 to  
20 7.9, well above the SSE of 7.0.

21 Given that that is the appropriate standard of  
22 conservatism for a nuclear power plant, that is, not just  
23 50-50, but 16 percent, then you look at the best testimony  
24 regarding ground acceleration from an earthquake magnitude  
25 earthquake, that is Dr. Boore. Dr. Boore's testimony clearly

1 states that for 7.5, the mean plus one standard deviation, the  
2 ground acceleration is 1.1 g. That evidence is not  
3 controverted. The Applicants tried to controvert Dr. Boore's  
4 testimony by indicating in that -- well, Dr. Boore agreed with  
5 Dr. Campbell that they should reduce it. Dr. Boore did not  
6 agree it should be reduced. He said, okay, for comparison  
7 purposes, this is how it would be using Campbell's method.  
8 Then they tried to characterize --

9 JUDGE JOHNSON: Wait a minute. Does this mean that  
10 Mr. Pigott misrepresented the record that I was quoting back  
11 to him from his brief, where Dr. Boore said that if you  
12 exclude the data beyond 50 kilometers, he came up with a mean  
13 plus one standard deviation peak ground acceleration of 0.57  
14 g? This was represented to be Dr. Boore's testimony.

15 MR. WHARTON: I was going to get into Dr. Boore's  
16 testimony. I am not saying that it is a misrepresentation by  
17 Mr. Pigott. I think it is in the realm of lawyers' argument,  
18 but I think that it is attendant upon the Board to look at the  
19 record on this particular issue, and look at exactly what  
20 Dr. Boore said.

21 Now, if I can go to the transcript, Dr. Boore at  
22 page 6606, that is the area where this is being discussed.

23 JUDGE EILPERIN: After you do that, I would like you  
24 to also cover the point of whether or not you think you were  
25 foreclosed from questioning the NRC Staff as to post-CP events

1 on the Cristianitos fault.

2 MR. WHARTON: Yes. I will. I am prepared to do  
3 that.

4 Mr. Pigott asked on page 6606, back to the earlier  
5 question, Dr. Boore, as to whether or not you can calculate  
6 the PGA including equation number five. Could I ask you to  
7 look at this particular calculation and see if it satisfies  
8 your requirements? Answer: I will be glad to, fine, okay.

9 Now, you want it for a magnitude 7 at eight  
10 kilometers, is that correct? That is correct.

11 It will take me more than a minute.

12 Take your time, we will just wait.

13 Right. I have some numbers here. I didn't have to  
14 double-check them but they look reasonable.

15 Okay, subject to being recalculated in a better  
16 atmosphere, what numbers did you come up with?

17 Okay, I came up with mean PGA at eight kilometers  
18 with a magnitude seven would be 0.37 g, and the mean plus one  
19 standard deviation would be 0.68 g.

20 Now, what he was given here, was this was the data  
21 without the data from 50 kilometers. Dr. Boore didn't say  
22 he should do this. Mr. Pigott gave it to him and said, would  
23 you calculate this, and he calculated it. It goes on later,  
24 explaining, and then he is asked, we get into whether or not  
25 he wants to do it, whether he thinks it is appropriate. He

1 states, question by Mr. Pigott: Okay, if it is assumed one  
2 is to -- one were directing his attention to a close in site,  
3 let us not be silly here. We are talking about an eight-  
4 kilometer distance in this proceeding. Is the data beyond  
5 50 kilometers of real significance in that kind of investiga-  
6 tion?

7 Answer: If we had a lot of data in close, then of  
8 course it wouldn't be significant, because we would just use  
9 the data we had in close to see what was going to happen in  
10 close. Since we don't, we postulate a model for what the  
11 attenuation curve might look like, and then we try to  
12 determine the parameters in that model. Some of these  
13 parameters have to do with attenuation coefficients, that B  
14 factor you were referring to earlier, and the H factor as  
15 well.

16 In that case, the distance data do provide values  
17 for those parameters which we can then use in the extrapola-  
18 tion to close-in data points, so given the lack of data that  
19 we have at this point, we felt it was important to use the  
20 data from greater distances, particularly because that  
21 enabled us to look at some of the larger magnitudes for which  
22 we have very little data in close.

23 Question: With respect, though, to the scatter that  
24 you come up with, would it not be correct that the use of very  
25 distant data beyond 50 kilometers would have an untoward

1 effect on the calculated scatter for application to close  
2 distances?

3 Answer: Well, we have looked at that, or we have  
4 tried to, by repeating the analysis for data just within 50  
5 kilometers. The way we look at the standard deviation, the  
6 standard deviation is made up in two parts. One is due to the  
7 regression we have against distance, and then one of them is  
8 the second regression against magnitude. The first regression  
9 when we -- these are in log units now -- when we did the  
10 analysis in the paper, we came up with a standard deviation  
11 of 0.22, and we did the analysis without data points beyond  
12 50 kilometers, and came up with 0.21, which is a very small  
13 difference in the standard deviation, so on that basis, we  
14 don't feel that the standard deviation is biased greatly by  
15 the addition of data points at greater distances.

16 Dr. Boore here is essentially standing by his  
17 report as is, the exercise of taking away the data from the  
18 50 kilometers was only a calculation exercise. He stands by  
19 his report as is, and states that it does not bias the report.

20 JUDGE EILPERIN: You have about one more minute.  
21 Could you turn to the foreclosure argument?

22 MR. WHARTON: Yes, to the question regarding --  
23 The question regarding were we foreclosed. Well,  
24 I think the best way to look at that is to consider yourself  
25 an attorney before the Board who is ruling, and said that they

1 ruled at the hearing stage, that the Board determined -- this  
2 is at page 21 of the PID, the quote -- the Board determined  
3 that the prior opportunity to litigate the capability of the  
4 Cristianitos fault at the construction permit stage foreclosed  
5 the relitigation of that question in this operating license  
6 proceeding, absent a sufficient showing of changed  
7 circumstances, a showing that was not made.

8 That was the ruling that the Board made, with Dr.  
9 Simons. I am an attorney licensed to practice. When a Board  
10 chairman tells me an issue is foreclosed, I don't go into the  
11 issue any more.

12 JUDGE EILPERIN: But wouldn't the post-CP events be  
13 changed circumstances?

14 MR. WHARTON: Yes.

15 JUDGE EILPERIN: So why couldn't you have cross-  
16 examined on them?

17 MR. WHARTON: Because he already determined at that  
18 time that we did not make a showing of changed circumstances.  
19 He foreclosed it. What he ruled then was, we don't see any  
20 changed circumstances, we are foreclosing the issue right now.  
21 That was what the record indicates. That is what the Board  
22 ruled, that is what is in the initial decision.

23 JUDGE EILPERIN: And you don't think you could have  
24 cross-examined that the Applicant or the Staff was in error in  
25 concluding that the post-CP events were not in fact changed



1 circumstances? Could you have cross-examined on that?

2 MR. WHARTON: I think it would have been improper.  
3 As an attorney, I was there. We argued the issue very  
4 heatedly. And I objected very, very strenuously on the  
5 record regarding it, and I brought up changed circumstances.  
6 I brought up the fact that they admitted testimony into the  
7 record from Sean -- from Dr. Biehler. The Board then said,  
8 well, why didn't you object when Dr. Biehler's testimony came  
9 in? I said, I didn't want to object to that, because I want  
10 the issue to be in here. The long and short of it was, we  
11 tried. They definitely foreclosed the issue, and when a  
12 Board chairman tells me the issue is foreclosed, I am not going  
13 to bring the issue up again.

14 JUDGE JOHNSON: But did you cross-examine Dr.  
15 Biehler?

16 MR. WHARTON: Yes, we did. The issue was not  
17 foreclosed at that time. The issue was not foreclosed until  
18 after they reviewed Mr. Simons' testimony and struck the  
19 testimony and then foreclosed the issue.

20 JUDGE JOHNSON: Okay, but who appearing for the  
21 Staff did you not cross-examine on the Cristianitos fault  
22 issue?

23 MR. WHARTON: Well, the Staff, I believe, if my  
24 recollection serves me properly, had Mr. Cardone was the  
25 geologist, I believe, who testified for the Staff. I don't

1 know if Dr. Reiter have any -- did anyone else have evidence?  
2 I don't remember who else had evidence regarding that. Dr.  
3 Cardone did. It is in the SER. There is extensive  
4 testimony in the SER that was submitted into evidence  
5 regarding the Cristianitos fault.

6 JUDGE JOHNSON: Yeah, but I am talking about direct  
7 evidence in -- submitted -- there are lots of things in the  
8 SER that weren't dealt with, but I am talking about evidence  
9 that was submitted as prefiled evidence in the hearing,  
10 whether there was any evidence of that --

11 MR. WHARTON: Well, the way this proceeding went,  
12 the geology section in the SER was presented as written  
13 testimony.

14 JUDGE JOHNSON: The entire --

15 MR. WHARTON: Yes. Not the entire SER. The  
16 geology section was submitted as written testimony, and it  
17 was identified by Mr. Chandler as to who was responsible for  
18 that part of the SER, and the section in the SER regarding  
19 the Cristianitos was in as written, formal written testimony  
20 which we could not cross-examine about.

21 JUDGE JOHNSON: And was Mr. Cardone brought to the  
22 stand to --

23 MR. WHARTON: Yes, he was.

24 JUDGE JOHNSON: And did he -- was he examined by  
25 Staff Counsel on his testimony on the Cristianitos fault?

1 MR. WHARTON: I don't believe there were any  
2 questions asked of him about the Cristianitos fault directly.

3 JUDGE JOHNSON: So in actual fact, the data -- or  
4 the information on the Cristianitos fault that appeared in  
5 that SER supplement was not discussed at the hearing  
6 subsequent to the ruling on Dr. Simons -- or Mr. Simons'  
7 testimony.

8 MR. WHARTON: That is correct, yes.

9 JUDGE EILPERIN: Could you conclude your rebuttal,  
10 please?

11 MR. WHARTON: Yes. On the area -- on the issue of  
12 the Cristianitos fault, if I may, as form of argument, during  
13 the hearings, after Dr. Biehler testified, Dr. Ehlig had  
14 testified, I came back home, and after hearing the testimony  
15 from Dr. Ehlig talking about the listric normal fault that  
16 curved towards the west where the Cristianitos fault  
17 hypocenters were, of the 1975 earthquake, and after seeing  
18 Dr. Biehler's -- hearing Dr. Biehler's testimony, seeing Dr.  
19 Biehler's chart, where he has the shallowest possible  
20 projection of the Cristianitos fault being not curved,  
21 flattening at depth, but just simply at an angle, and after  
22 drawing the error bars around the hypocenters, I came back  
23 home fairly excited, and I said Joyce, doing this proceeding --  
24 this is my wife -- I said doing this proceeding is an awful  
25 lot like trying to shoot a Rhinoceros with a BB gun. I mean,

1 there are so many things against you and the odds are so  
2 high and you are up against a lot of opponents, but I think  
3 I know how to do it, because if I hit it in the eye, I know  
4 where the eye is. The eye is the Cristianitos fault.

5 I came back two days later, and I said Joyce, they  
6 closed the eye. They threw out the issue of the  
7 Cristianitos fault. It is ended.

8 That is how I felt about that, and I think if you  
9 look at the record, I believe it is somewhat akin to what  
10 happened. The issue was wide open. It was very vulnerable  
11 on the issue of the capability of the Cristianitos fault.  
12 From Dr. Biehler's testimony, his hypocenter, as his error  
13 bars show, those earthquakes should be assumed of a curve in  
14 the Cristianitos fault. Mr. Simons' testimony indicates  
15 epicenters in the Cristianitos fault.

16 For no really valid legal reason it was kicked out.  
17 I believe that is error, and the Board should remand it.

18 JUDGE EILPERIN: Thank you, Mr. Wharton.

19 That concludes the oral argument today. Thank you,  
20 gentlemen. The case is submitted, and as I said earlier, we  
21 will be issuing a decision sometime before the plant comes  
22 critical. Thank you.

23 (Whereupon, at 11:29 a.m., Friday, March 12, 1982,  
24 oral argument in the above-entitled matter was concluded and  
25 the case submitted)

NUCLEAR REGULATORY COMMISSION

This is to certify that the attached proceedings before the  
Nuclear Regulatory Commission, Atomic Safety and Licensing Appeals Board

in the matter of: Southern California Edison, et al,  
San Onofre Nuclear Generation Station, Units 2 and 3  
Date of Proceeding: Friday, March 12, 1982

Docket Number: 50-361-OL, 50-362-OL

Place of Proceeding: San Diego, California

were held as herein appears, and that this is the original transcript thereof for the file of the Commission.

George D. Girton

Official Reporter (Typed)

George D. Girton

Official Reporter (Signature)